

The Bad, the Ugly, and the Good of Wood Fuel Handling and Storage

In 95 slides. 12 ½ seconds each....?

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Know Your Enemy

Fossil fuels have good handling and flow characteristics

Fossil fuels are energy dense (coal is 5-10 times denser than wood)

Fossil fuels are :

“Easy”

And storage is cheap,
e.g. \$1000/year lease.



Dependable • Sustainable • Cost Effective

Wood Fuel is seen as :

Dirty **Dusty** **Labour intensive**
'Old fashioned' **Hard to handle** **Bulky**
A lot of hassle **Unreliable**

**We need to address these issues, make the right choices,
and deliver the best fuel storage solution possible,
within the budget available.**

Dependable • Sustainable • Cost Effective

The Wood Fuel Challenge

Because your customer has only ever had fossil fuel, they have certain expectations...

They expect their fuel supply to be reliable and seamless;

They expect their fuel to be off-loaded quickly;

They do not want a messy site;

They expect to have several days of fuel storage on site ;

They expect their fuel to get to the boiler automatically;

They expect the fuel not to get jammed;

They expect good access for easy maintenance etc etc ;

A good wood fuel 'system' does the following:

Receives the fuel easily - from a variety of vehicles

Should avoid further handling with a loader

Should be large enough to relieve stress (!) CRITICAL

Should be robust, and fuel flexible

Should ideally be covered – with ability to uncover.....

Should have low electrical demand

Should, ideally, offer redundancy

Should neatly contain the fuel and minimise wind blow of wood dust

Should provide good access for maintenance

Needs to do ALL the above – at a reasonable price !! \$1000/m³ ?

The Challenge of Automation



Existing coal boiler fuel delivery/recovery/transport already automated to a greater or lesser degree.

The Challenge of Automation

Chip will interlock to bridge augers, create vertical 'walls' and be generally uncooperative.



Flatten bunker floor

Rotary arm agitator

Open top auger

'Agitate' fuel faces to eliminate bridging



a) Getting the wood fuel into the fuel store

Things to avoid.....













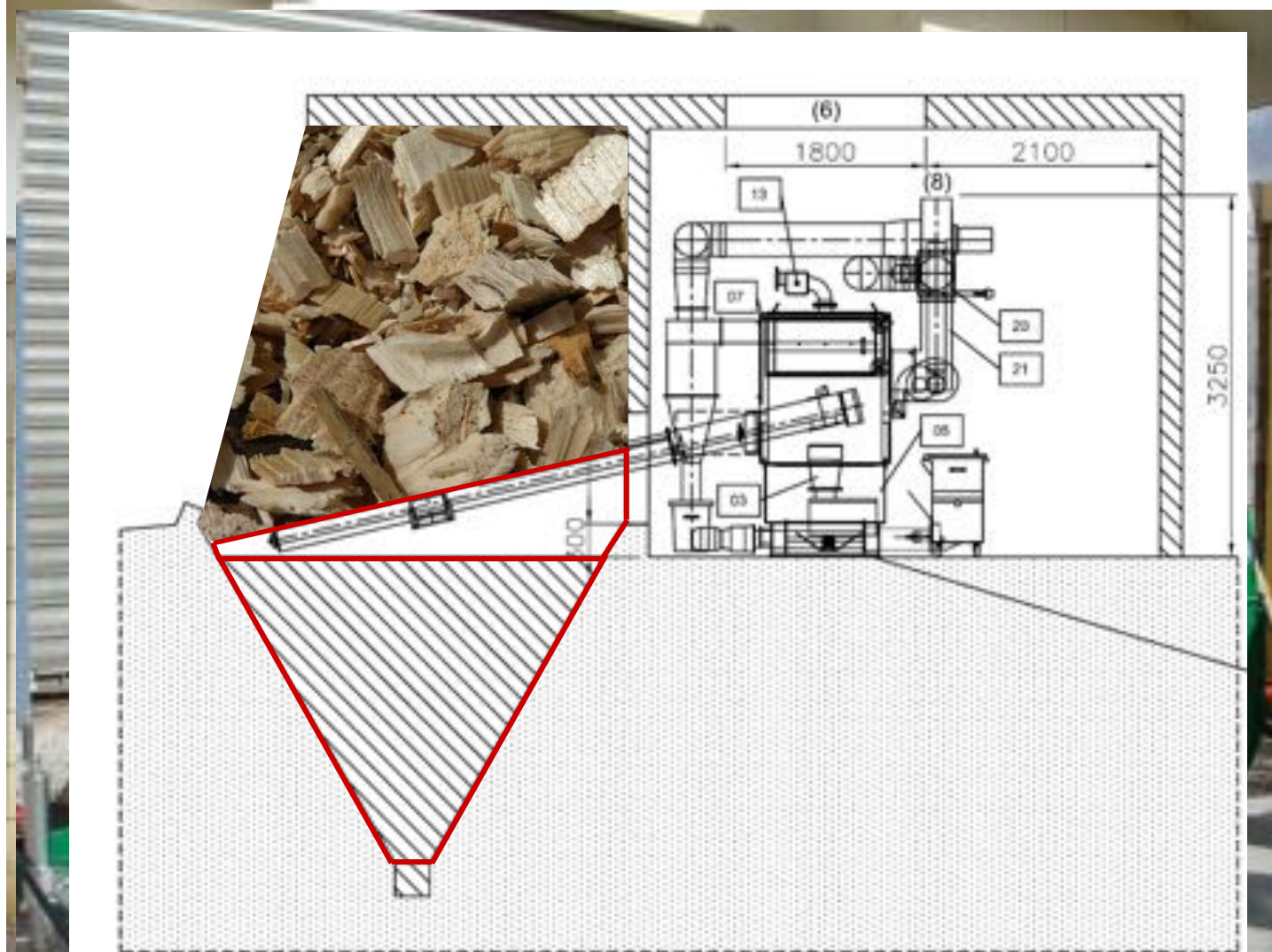


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The Challenge of Quantity



Dependable • Sustainable • Cost Effective

















This loader has nearly been delivered to the boiler overnight (!)

If possible, avoid these safety issues, as well as the cost of

- extra manhours
- diesel
- equipment costs







**Getting the wood fuel into the fuel store
– better...**



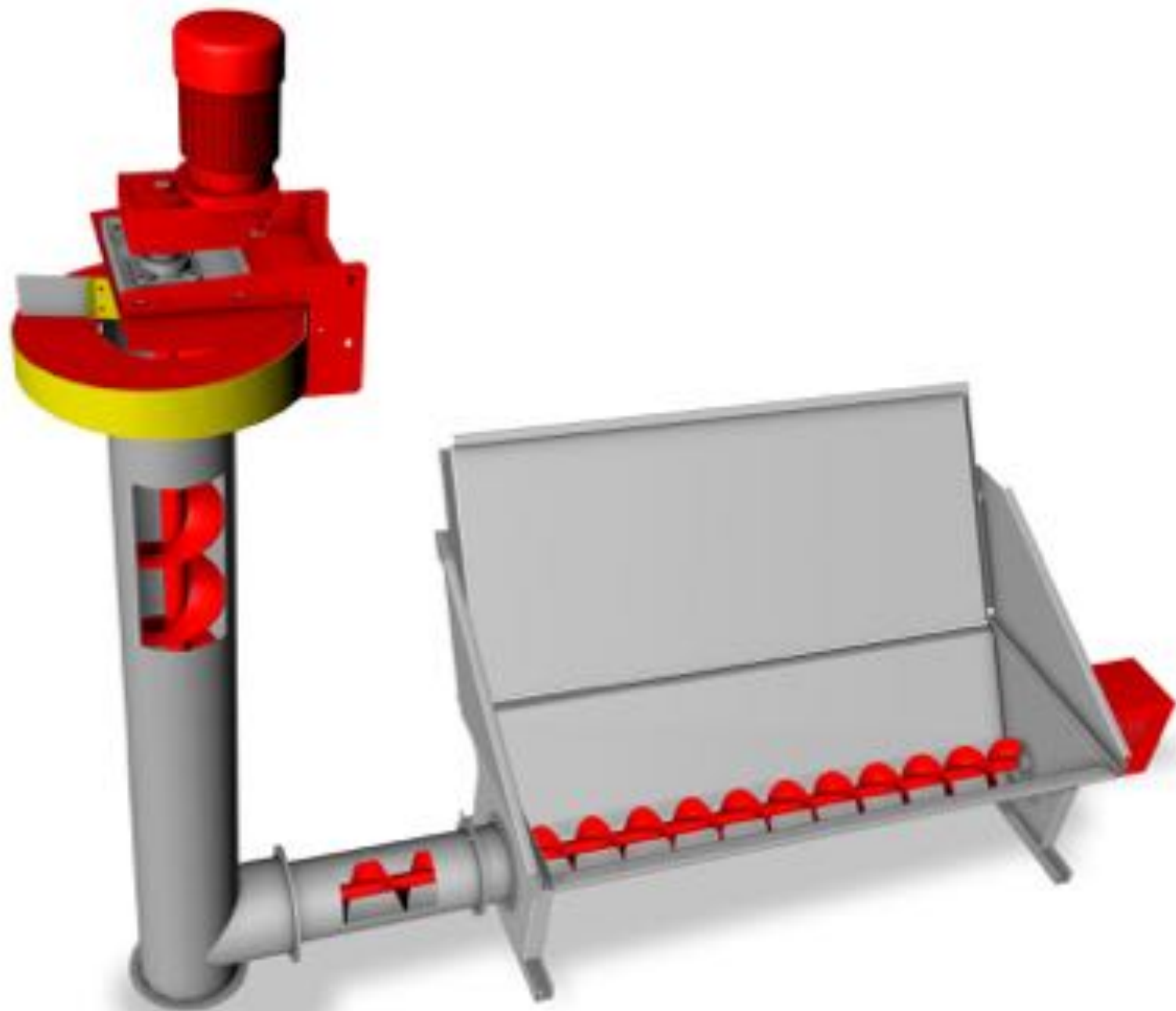














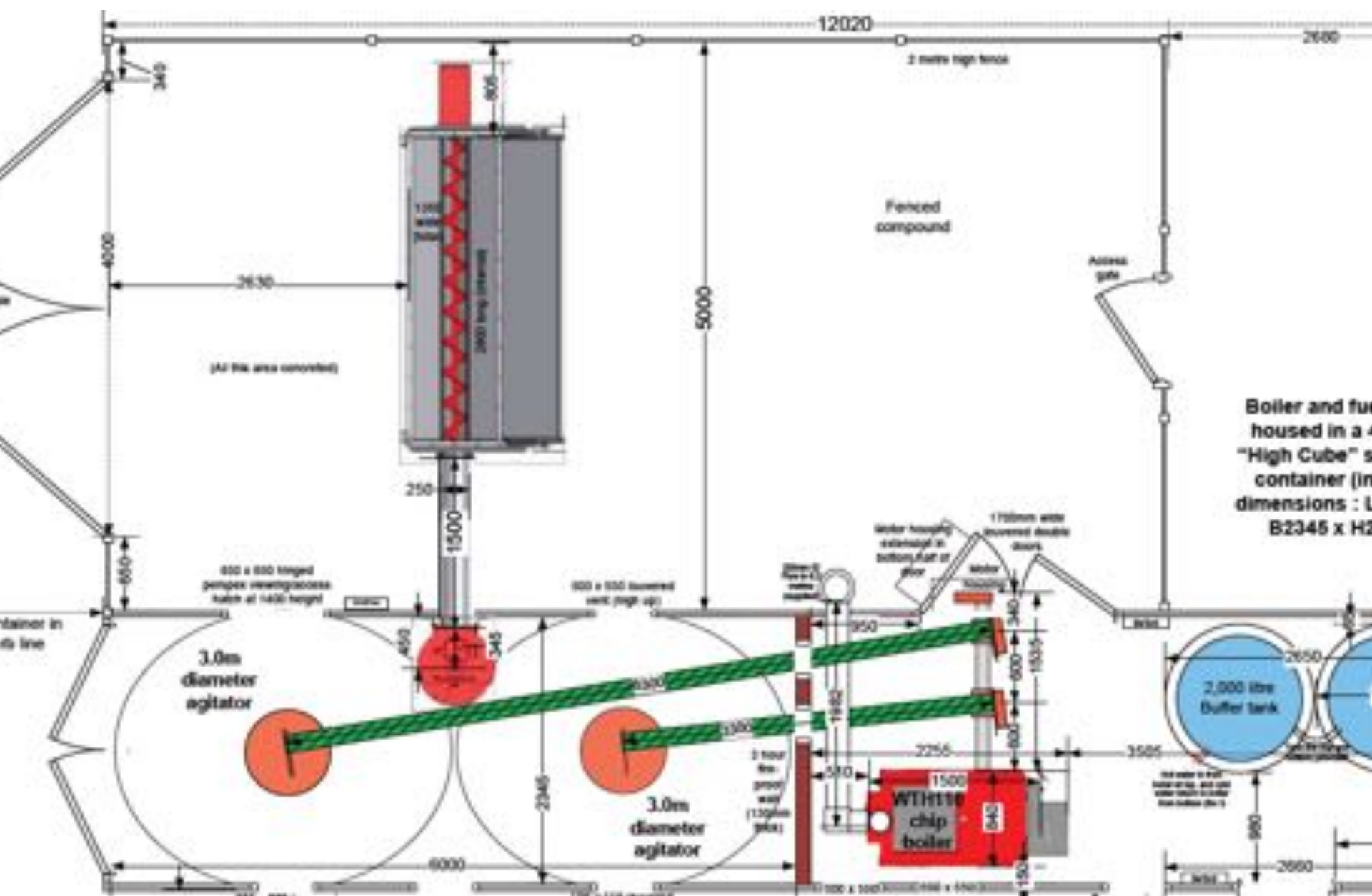
NO WALKING
OR STANDING
ON CONVEYER





THU 540069 6
45G1

| | |
|-----------|------------|
| MAX. WGT. | 30,000 LBS |
| MAX. WGT. | 67,000 LBS |
| MAX. | 1,000 NOS |
| MAX. | 4,525 NOS |
| NET | 20,500 NOS |
| | 58,625 LBS |
| DR. EXP. | 74.4 DIA. |
| | 2.100 DIA. |























The **truly renewable**
fuel for your business



wenz

44C WOODCHIP UNLOADER

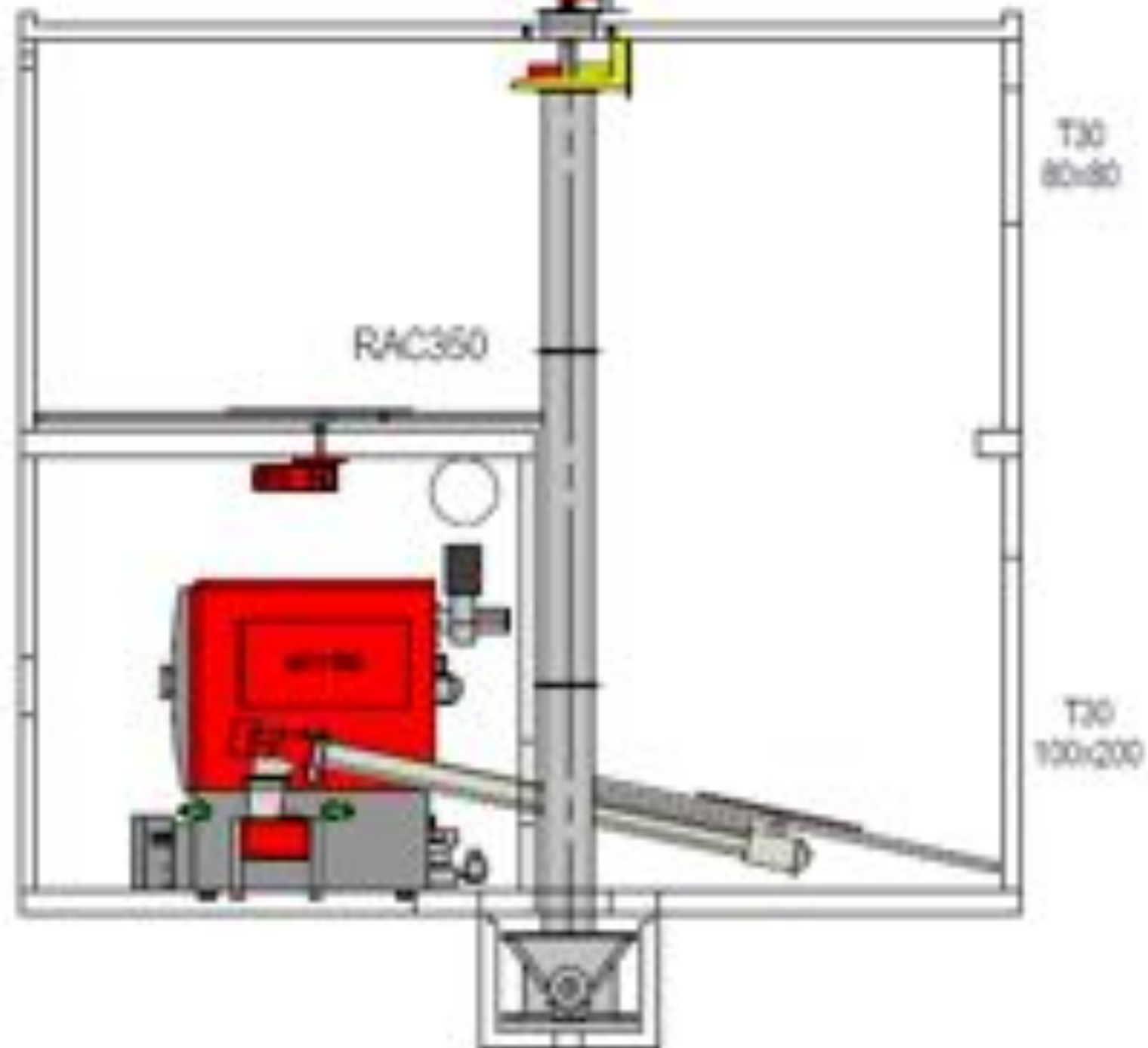




















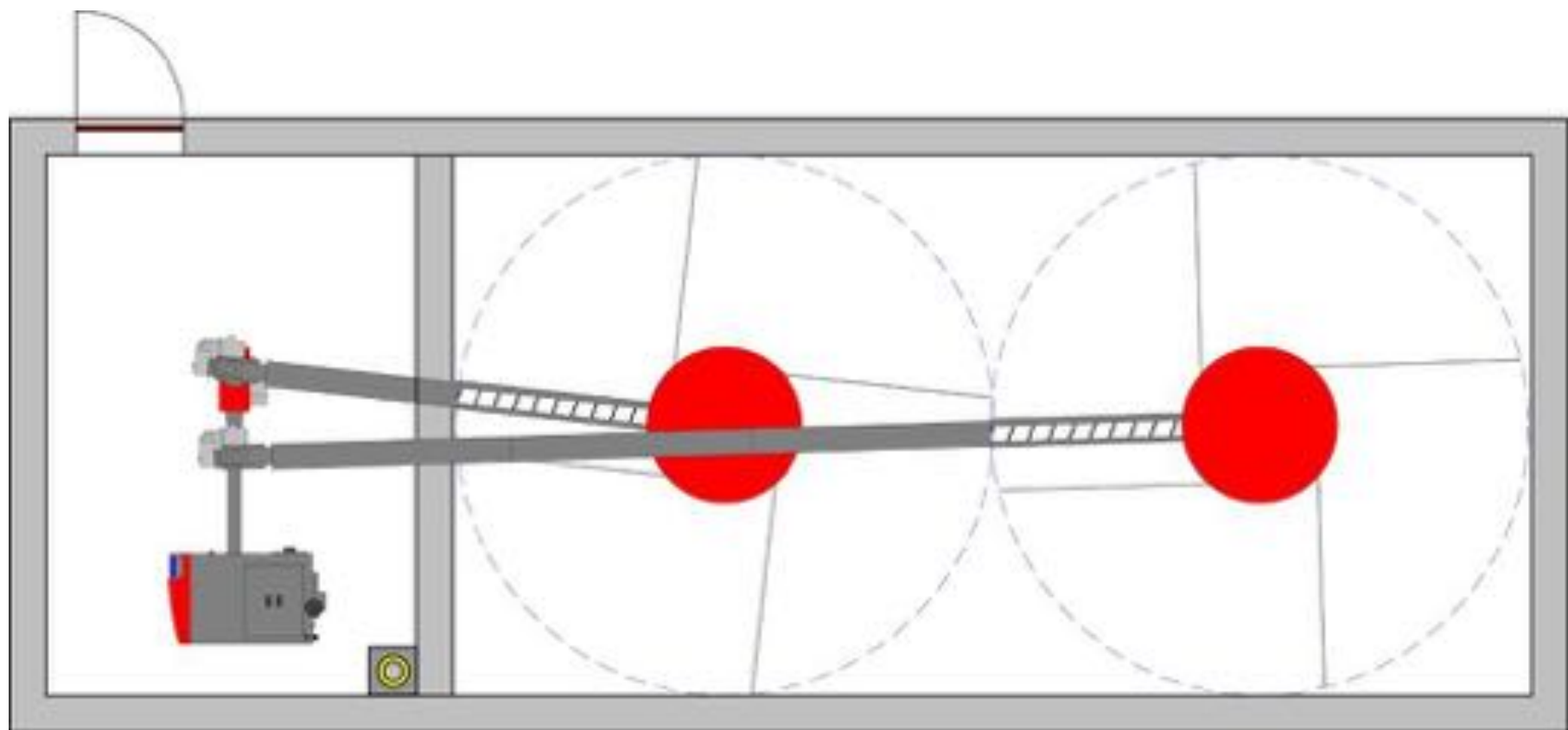
Getting the wood out of the fuel store













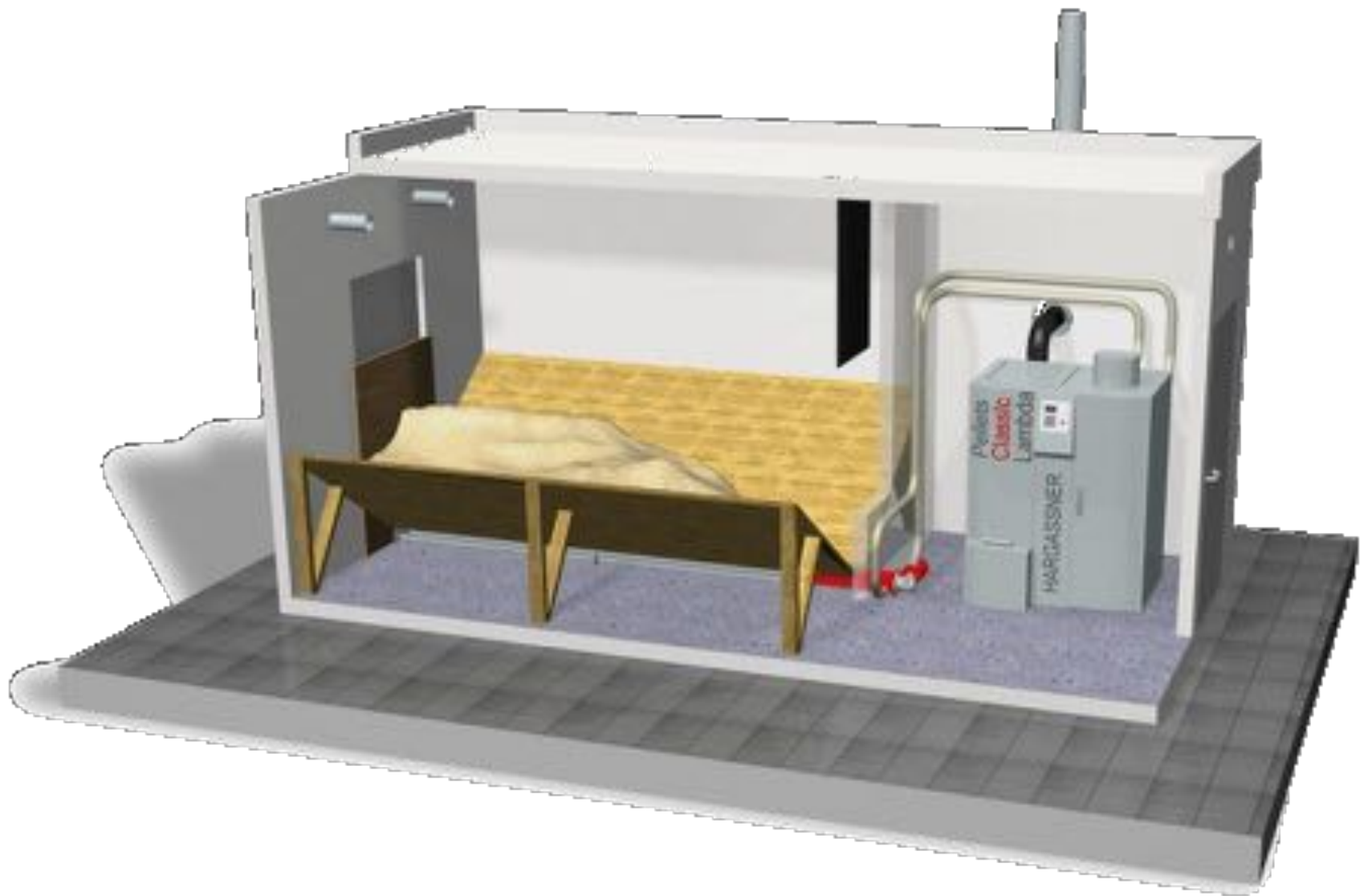




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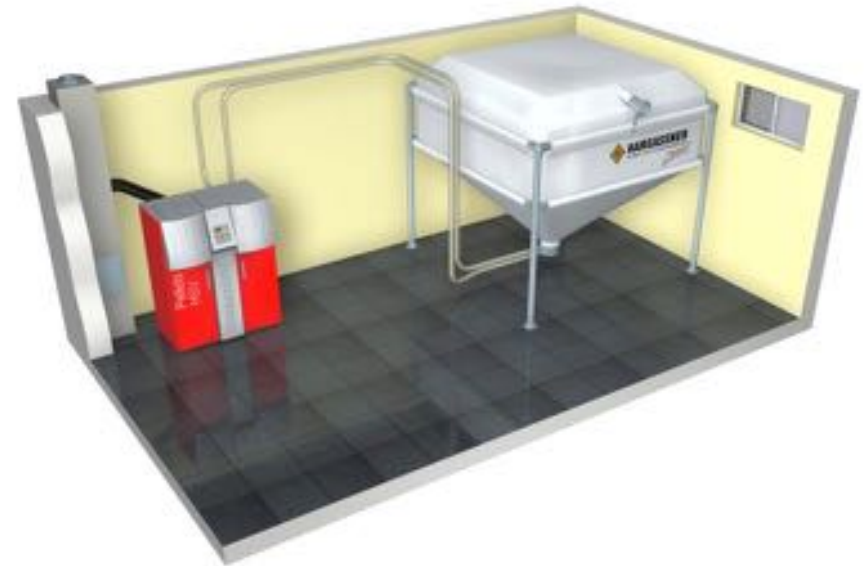




1. Auger-Suction Combination



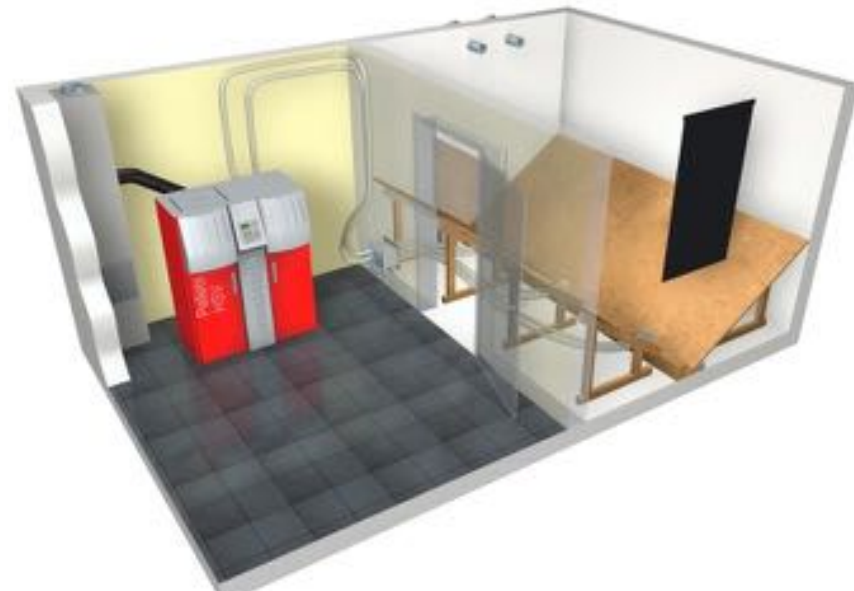
2. Bag Silo



3. Direct Auger



4. Suction System 1-2-3- or 4 inlets



















22.12.2008



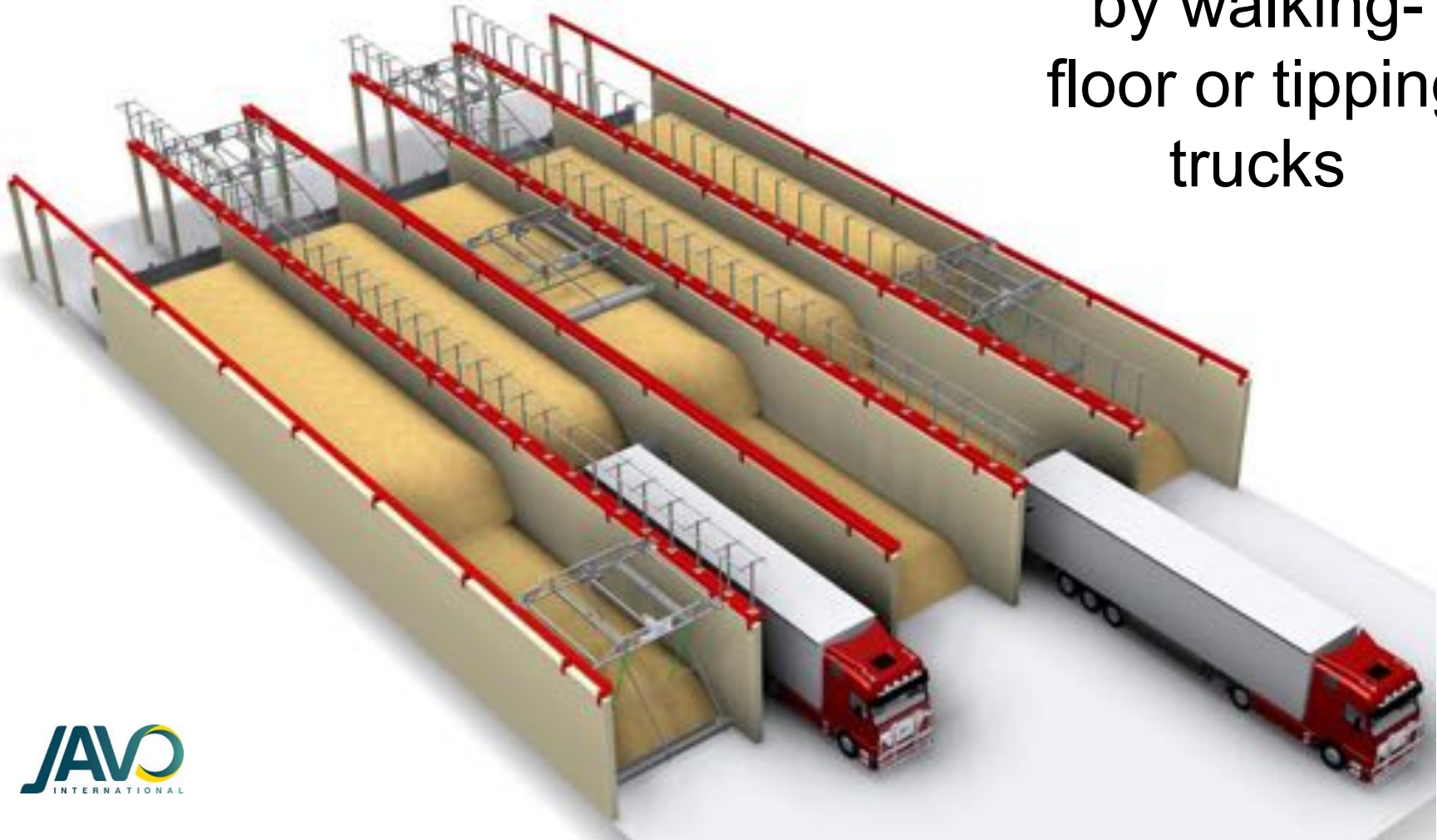


Don't forget the ash !!



Getting the wood In and Out of the fuel store

Easy delivery
by walking-
floor or tipping
trucks





Reception - Storage - Recovery





No need for expensive civils work,
with complex suspended walls....





In Summary : The Perfect Fuel Handling Solution

1. On-site fuel storage of ideally a **week** of winter use
2. Simple and rapid construction
3. Fully automated – no need for a loader. No double-handling.
4. Low electrical demand (peak and average)
5. Not dusty or noisy
6. Able to receive from large tipping trucks
7. Capable of different fuels
8. Minimal risk of blockage, and/or easy fix
9. Good access for maintenance
10. Ideally feeding to a Ram stoker on the wood boiler.

But Budgets require compromise, so prioritisation is often required



For further information, on
fuel handling solutions
please contact :

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