

# Large Plastic Crate Recycling & Crushing System Solution

## — Innovative Application Case (Nongfu Spring Project)

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### 1. Project Overview

This solution has been successfully implemented at a production base of **Nongfu Spring**, a leading beverage company in China.

Since its commissioning in 2017, the system has been operating stably for many years, supporting centralized plastic waste recycling across multiple production sites. It has been highly recognized by engineering, procurement, and technical teams, and has also attracted attention from international clients.

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### 2. Core Challenge

The key challenge of this project lies in processing **extra-large plastic crates**.

**Crate Size:** 870 × 870 × 870 mm (nearly 1 cubic meter)

Material Characteristics:

- High strength
- High thickness
- Strong toughness

These materials are widely recognized as **extremely difficult-to-shred plastics** in the industry.


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### 3. Limitations of Traditional Solutions

Conventional industry solutions rely on **large-scale shredders**, which present significant problems:

- Require oversized shredders (up to 1.5m class)
- Very high equipment investment
- Large footprint

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- Frequent material jamming and blockage
- Unstable operation
- High maintenance costs

In real applications, even large machines often **fail to process these crates consistently and efficiently.**

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#### 4. YUEDU Innovative Solution

To solve this industry challenge, YUEDU developed an innovative process:

Hydraulic Pre-Cutting + Medium-Sized Crushing System

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Core Concept

Instead of relying on larger machines,  
**we change the process logic to solve the problem efficiently.**

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#### 5. Processing Workflow

Step 1: Hydraulic Pre-Cutting

An automatic hydraulic cutting system is used to cut the 870mm cubic plastic crates into approximately 5 panels, each about 5 cm thick.


- Fully automatic operation
  - High cutting efficiency
  - No manual intervention required
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Step 2: Crushing Process

The pre-cut panels are then processed by a medium-sized industrial crusher, achieving:

- Stable operation
- High efficiency
- Continuous processing

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## 6. Key Advantages

Compared with traditional solutions, this system offers clear advantages:

No Need for Large Equipment

Avoids the use of oversized, expensive shredders

Significantly Lower Investment

Total investment reduced by approximately 30–40%

Improved Stability

Effectively eliminates jamming and blockage issues

Simplified Process

More streamlined workflow and easier system management

Lower Energy Consumption

Improved operational efficiency

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## 7. System Configuration

This project is a complete automated recycling system, including:

Pre-processing Module

Automatic hydraulic cutting system for large crates


Crushing Module

High-efficiency industrial crusher with low noise and high output

Environmental Module

Dual-stage dust collection system (cyclone + airflow separation) ensuring dust-free output

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## Purification Module

Metal separation system to remove contaminants and protect downstream equipment

## Automatic Packing Module

Automatic weighing and bagging system (20–25 kg per bag)

Final output can be directly used in downstream processes such as injection molding or pelletizing.

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## 8. Key Performance Data

- **Capacity:** 1.5 – 2 tons per hour
- **Crate Processing Volume:** 400–600 units per 3 months
- **Single Crate Value:** approx. RMB 500
- **Project Investment:** approx. RMB 850,000

Compared to similar solutions in the market (RMB 1.2M – 1.4M), this system significantly reduces investment while maintaining performance.

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## 9. Project Value


### Cost Benefits

- Reduced equipment investment
  - Lower waste disposal costs
  - Conversion of waste into reusable raw materials
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### Operational Benefits

- Fully automated continuous operation
  - Reduced labor requirements
  - Improved processing efficiency
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## Process Benefits

- Simplified workflow
  - Improved system stability
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## Environmental Benefits

- Dust-free processing
  - Compliance with environmental standards
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## 10. Applicable Industries

This solution is suitable for:

- Beverage & bottled water industry
  - Logistics crate and pallet industry
  - Plastic manufacturing
  - Recycling industry
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## 11. Conclusion

This project successfully solves a long-standing industry challenge:

### **Efficient processing of large, high-strength plastic crates**

Without relying on oversized equipment, the system achieves:

- High efficiency
  - Stable operation
  - Lower cost
  - Simplified process
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## Business License (Official Chinese & English Translation)



### Business License (Translated Version)

Shanghai Yuedu Technology Co., Ltd.

#### ◆ Company Information

**Company Name:**

Shanghai Yuedu Technology Co., Ltd.

**Unified Social Credit Code:**

91310114MA1GUXHQ8H

**Company Type:**

Limited Liability Company (Invested or Controlled by Natural Persons)

**Registered Address:**

Room 17239, Building 2, No. 4268 Zhen'nan Road, Jiading District, Shanghai, China

**Legal Representative:**

Deng Hao

**Registered Capital:**

RMB 3,700,000

#### ◆ Registration Details

**Date of Establishment:**

September 5, 2018

**Business Term:**

From September 5, 2018 to September 4, 2048

#### ◆ Registration Authority

Shanghai Jiading District Administration for Market Regulation

**Date of Issue:**

September 5, 2018



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In case of any discrepancy, the original Chinese version shall prevail.

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✓ Officially issued by Chinese government authority

✓ Valid for international business cooperation

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## **About YUEDE Shredders**

Shanghai YUEDU Technology Co., Ltd. is a **Shanghai-certified high-tech enterprise** specializing in the development and manufacturing of **shredding and destruction equipment**. We serve a wide range of sectors including **government agencies, financial institutions, military departments, enterprises, and recycling industries**.

Our offerings include **office and industrial-grade paper shredders, hard drive destroyers, plastic crushing systems, and fully customized destruction center solutions**. From design to delivery, we help clients achieve efficient, secure, and compliant material destruction.


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## **Our Mission**

We are dedicated to the shredding and destruction industry, continuously solving diverse material shredding and disposal challenges for our clients around the world.

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