OUR MANUFACTURING ACTIVITIES USING CLEARANCE METAL

Fukui Prefectural Tsuruga Technical High School



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In front of the Tsuruga Red Brick Warehouse

Fukui Prefectural Tsuruga Technical High School 3rd Year

TSURUGA TECHNICAL HIGH SCHOOL

Department of Electronics and Mechanical Engineering

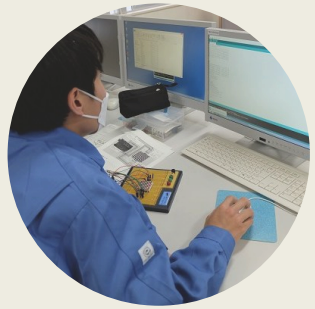






Department of Information and Chemical Engineering

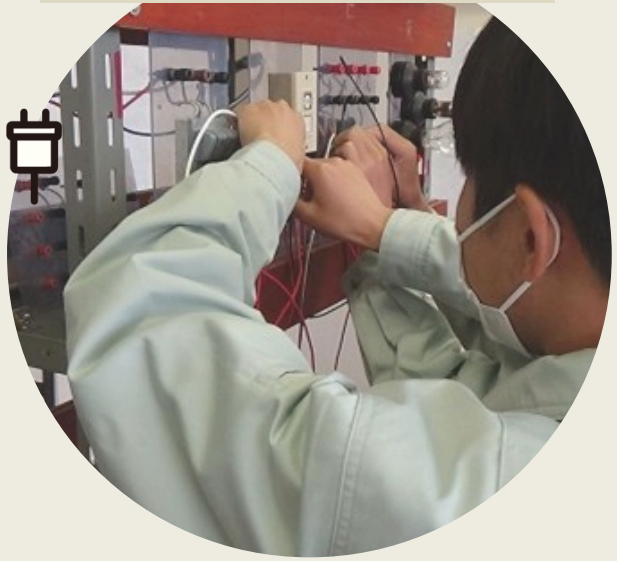




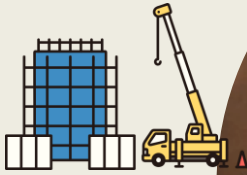


Department of Electrical Engineering





Department of Architectural Systems







Department of Electronics and Mechanical Engineering

Information technology

Electrical engineering

Mechanical engineering



Welding



Lathe



Dustpan



CAD



Grinding

Electrical control



A scene from a practical training session

WHAT IS “PROJECT-BASED RESEARCH”?





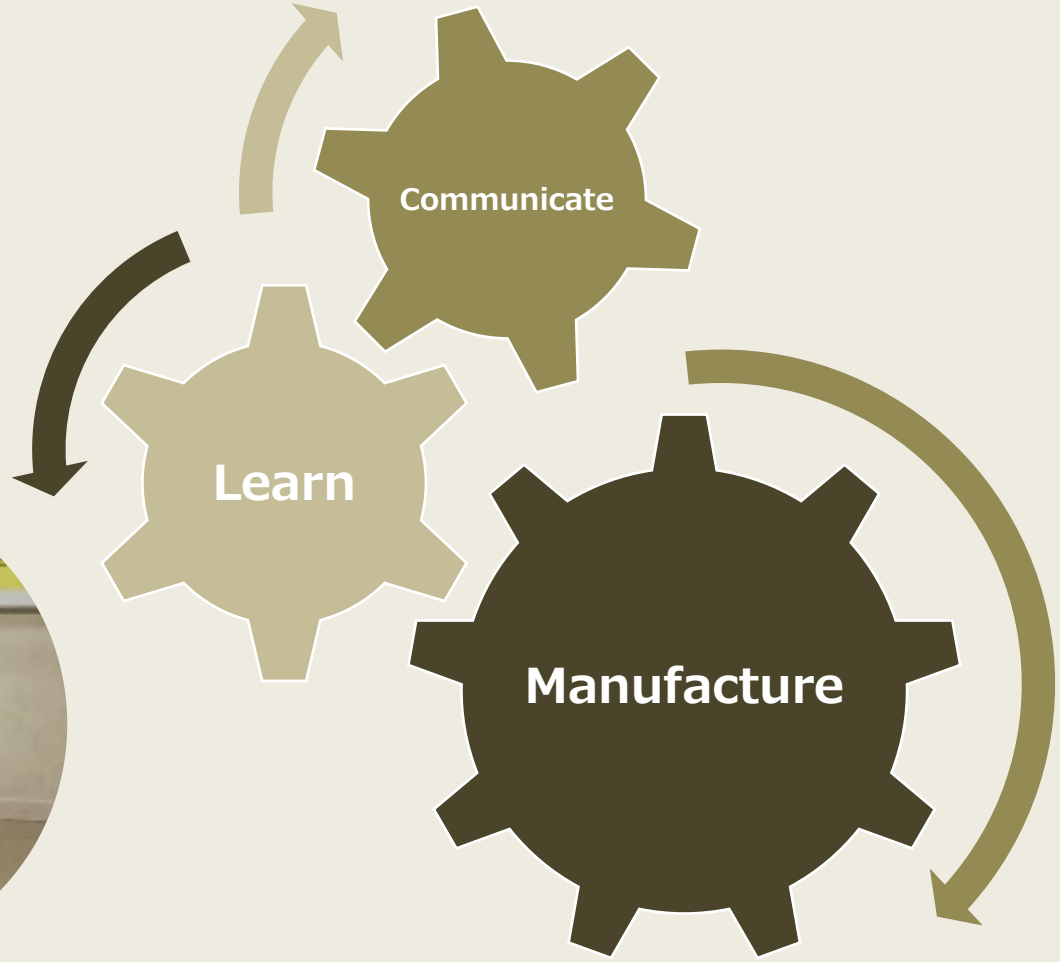




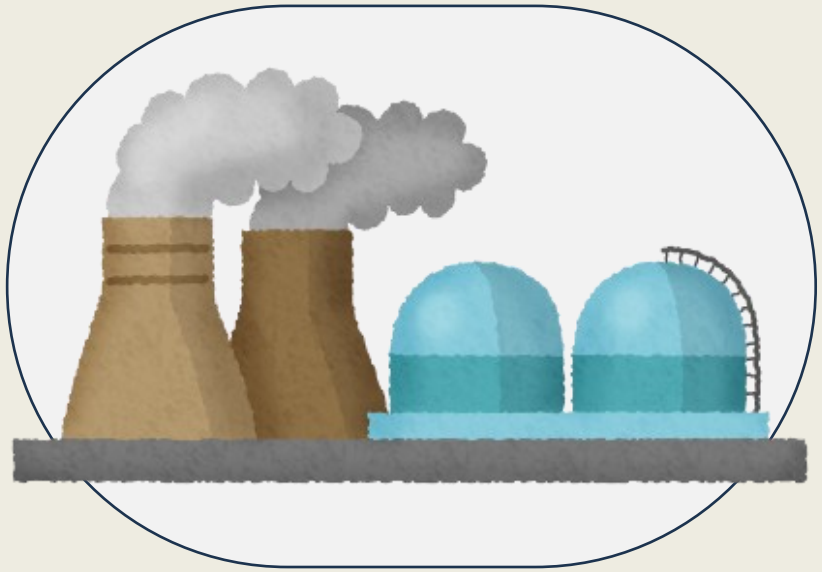


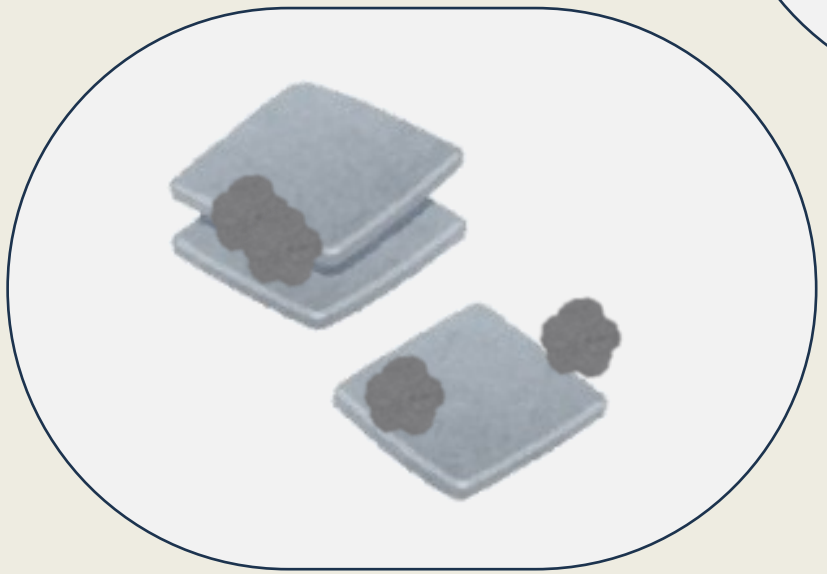
Manufacturing Using Clearance Metals
Promoting Public Understanding of Clearance Metals





DETAILS OF “CLEARANCE METALS”







Radiation Exposure in Daily Life

Unit: mSv (millisieverts)



Annual natural radiation per person in Japan
(from cosmic rays, the ground, food, etc.)

1.48

6.9 — Whole-body CT scan (per exam)



0.6 — Mass screening stomach X-ray (per exam)



0.05 — Mass screening chest X-ray (per exam)





Clearance level (annual)
Level at which health effects are considered negligible

0.01

Source: Prepared based on "Nuclear Energy 2010" by the Agency for Natural Resources and Energy

Cited from: https://note.com/fkiutd_official/n/n97d5b22cd7e9

Reasons why we joined the clearance team

I saw a project-based research presentation by Tsuruga Technical High School when I was in junior high school.

My brother was in the first graduating class.

My family works in the nuclear industry.

I want to pursue a career in the nuclear industry!

I wish to raise awareness

I’d like to work in Reinan!

I want to work in my hometown, Tsuruga!

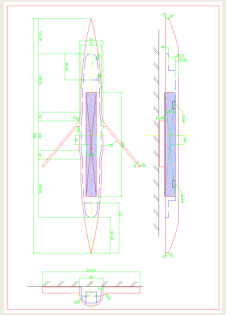
I want to learn more about clearance metals...!
Sounds exciting to have opportunities to interact with so many different people...!

Initiatives Undertaken This Academic Year

March	Networking event in Kagoshima	September	Facility tour at Mihama-cho Kiipasu Visit to Hamabiyori at Mihama Station to see the Kamado stools
April	Site visit to observe clearance metal products in Tsuruga City	October	Study session for the Tsuruga International Symposium 2026
May	Clearance metal study session Hands-on Casting Workshop at Kawachu Inc.	November	Nuclear power commission networking event Presentation at the Tsuruga International Symposium 2026 CL-Net networking event 2026 Casting of Kamado benches at Kawachu Inc.
June	Presentation at a nuclear technology seminar in Mihama	December	Project-based research presentation
July	Facility tour at TVE Co., Ltd.	January & February	Manufacture of Kamado benches
August	Visit to Ohi Nuclear Power Plant	March	Completion of Kamado benches

Products by Our Seniors





Boat-shaped streetlight for the student entrance 2022



Signage plate 2024



Manhole cover 2025



School emblem stand table 2023



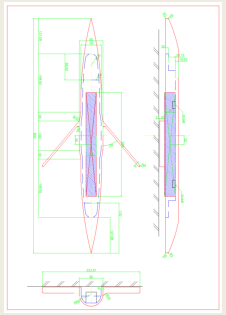
Tissue box 2025

Products by Our Seniors

Tsuruga

Boat





Boat-shaped streetlight for the student entrance 2022

Light weight

Small-sized



Signage plate 2024

Seen locally



Manhole cover 2025



School emblem

Weight

School emblem stand table 2023

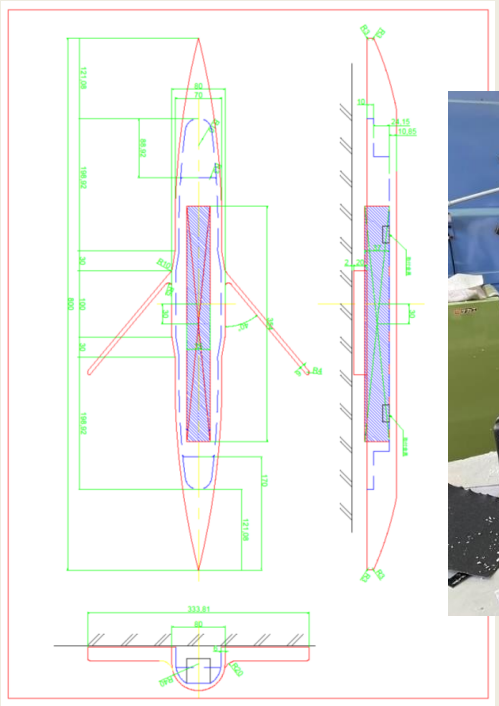
Recycling

Everyday household item



Tissue box 2025

Boat-shaped streetlight for the student entrance 2022



Design drawing





Casting



Fabrication of styrofoam molds



Installation

Boat

Tsuruga

Light

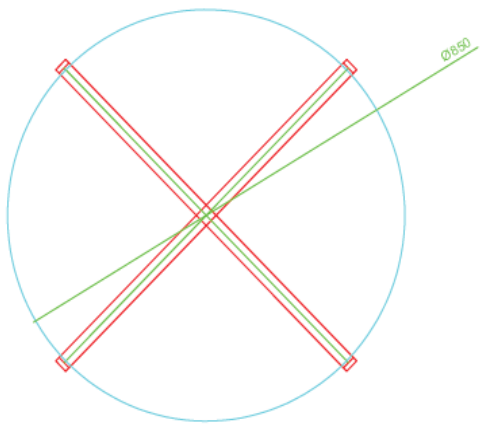
School emblem stand table 2023

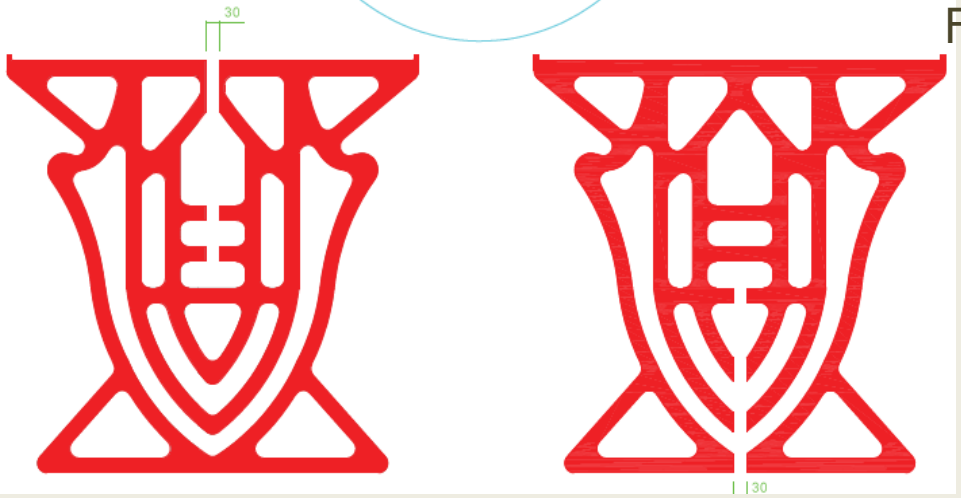
School emblem

Weight

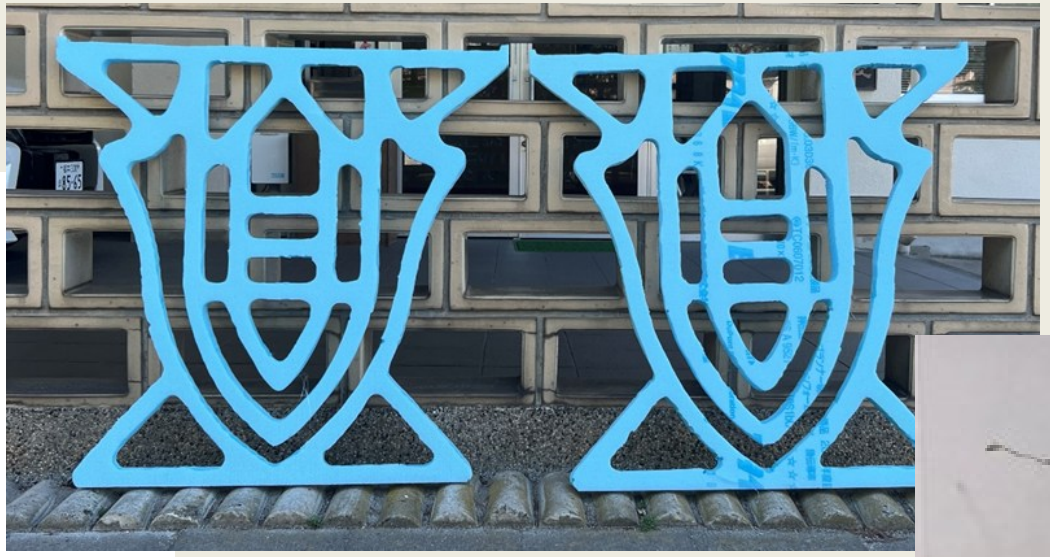


School emblem





Design drawing



Fabrication of styrofoam molds



Casting

Approx. 130 kg



Finished product

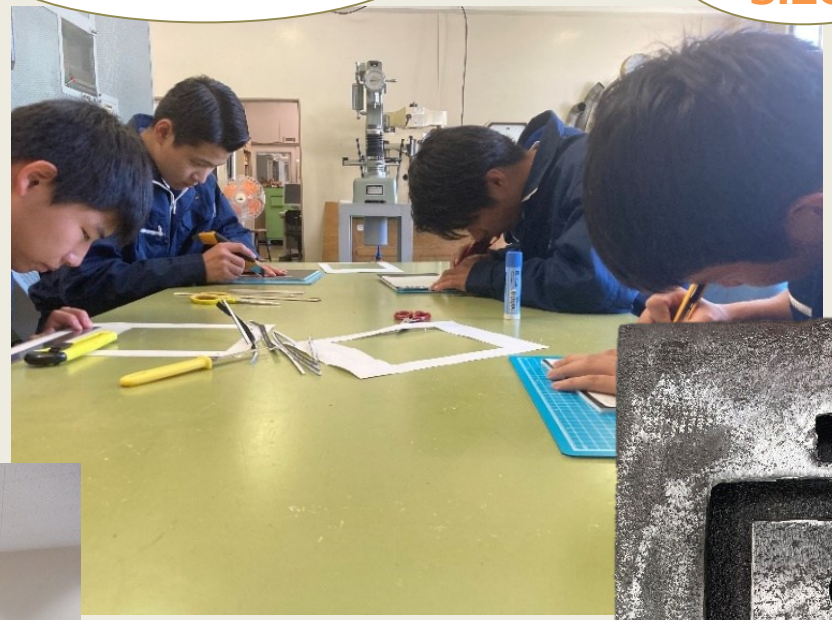
Signage plate 2024

Familiarity

Light weight

Small -sized













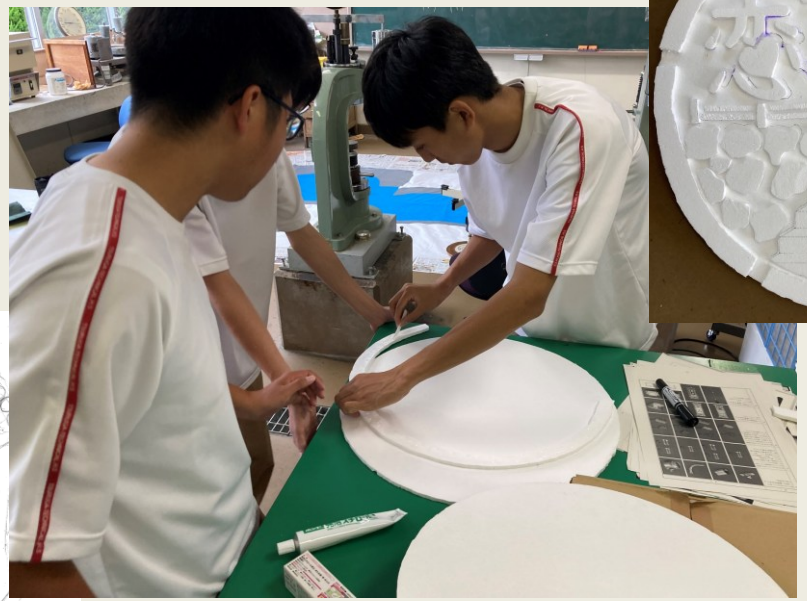




Manhole cover and tissue box 2025









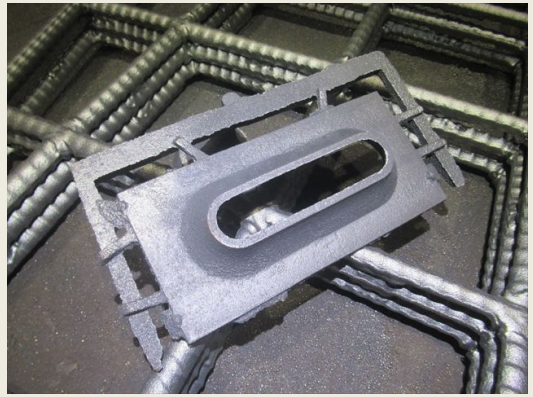


Seen locally

Finished product









Recycling

Everyday household item

Finished product

We'd like to see the products made by our seniors!













What kind of products are there?

We'd like to see the products made by our seniors!















I used to think clearance metals were something special, but they're almost the same as any other metals!

What kind of products are there?



Networking event in Kagoshima

What about other schools?



Nuclear technology seminar



Clearance metal study session

What are clearance metals?

We want to communicate!



What is casting?





Plant tour at TVE Co., Ltd.

In a nuclear power plant...





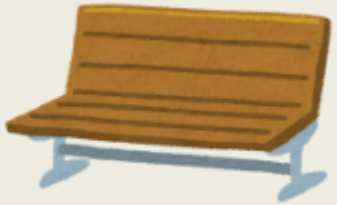
Visit to Ohi Nuclear Power Plant

Communi-cate

Learn













Manu-facture

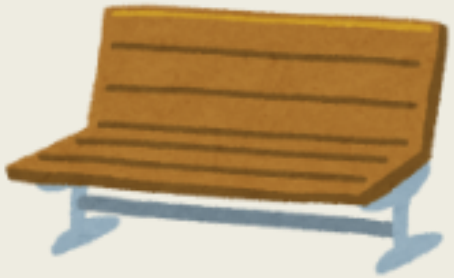
What to produce?







WHAT IS A “KAMADO BENCH”?



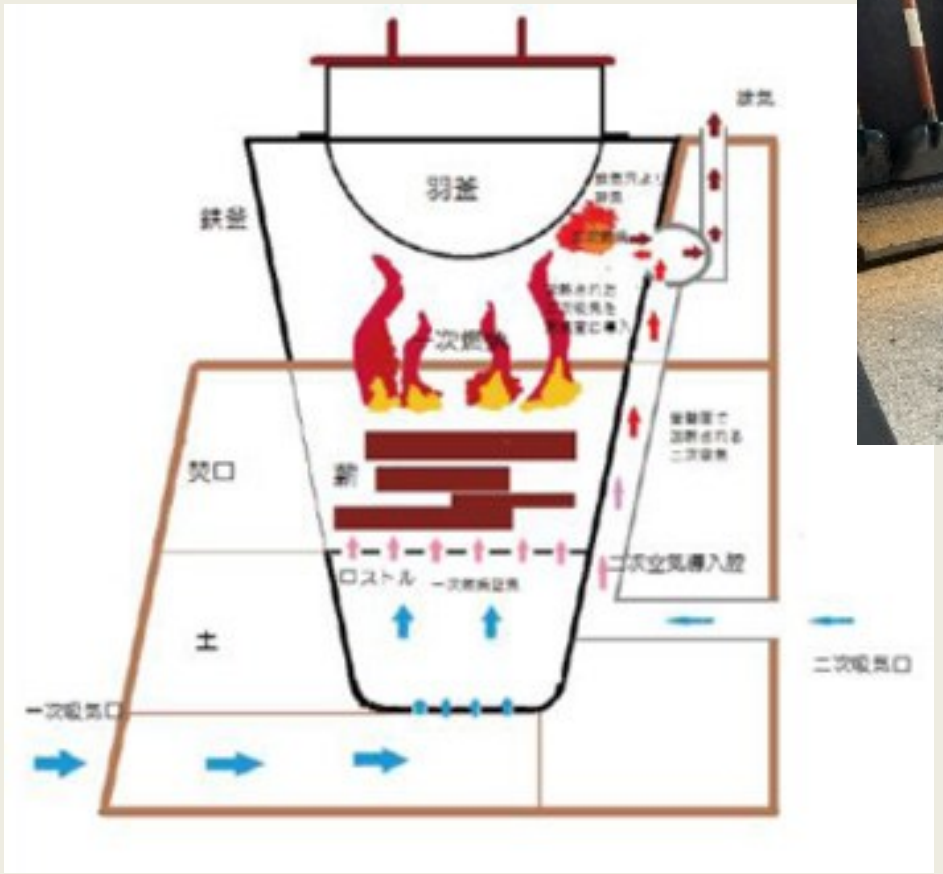




Background

- Given the recent increase in major **earthquakes**, a significant quake could strike Tsuruga at any time; we felt that simply having these benches installed might offer some help.
- They can serve as **convenient chairs for everyday use**, and in an emergency, they can also function as **Kamado** (stoves); we hope they will prove useful at evacuation centers.

At Kiipasu, Mihama Energy and Environment Education Experience Center



Structural Diagram of the Mitsuoka Hettsui (Traditional cooking stove)





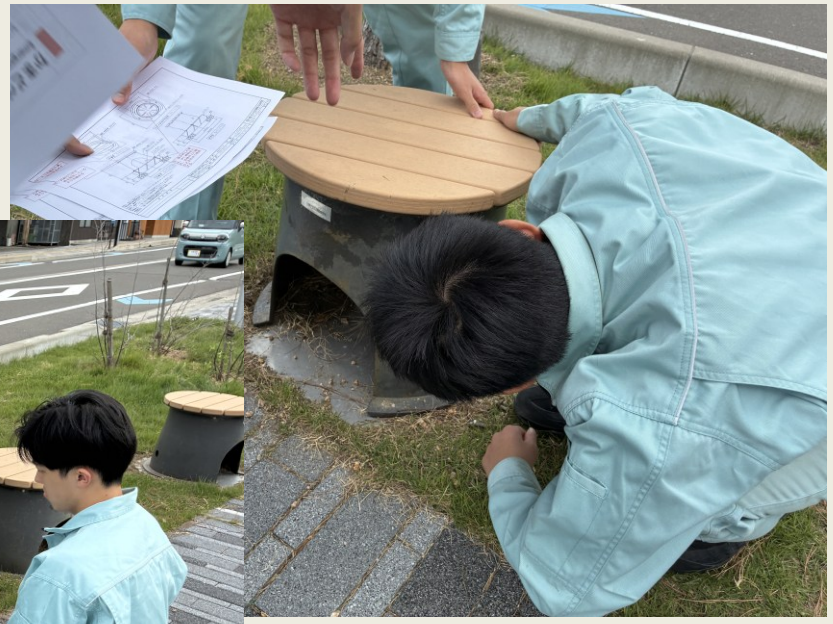


Roadside Station Wakasa Mihama Hamabiyori





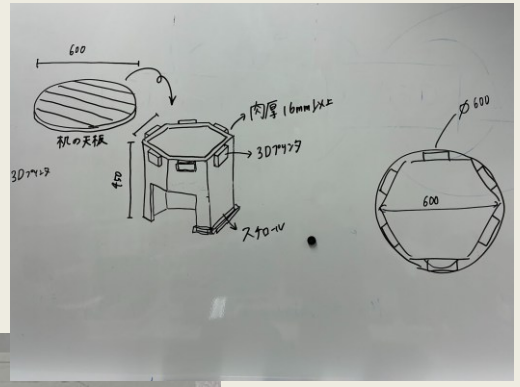


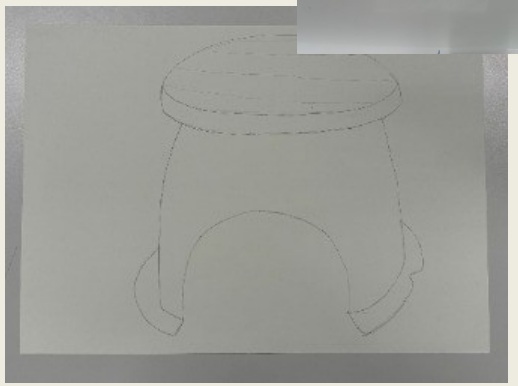


道の駅　若狭美浜

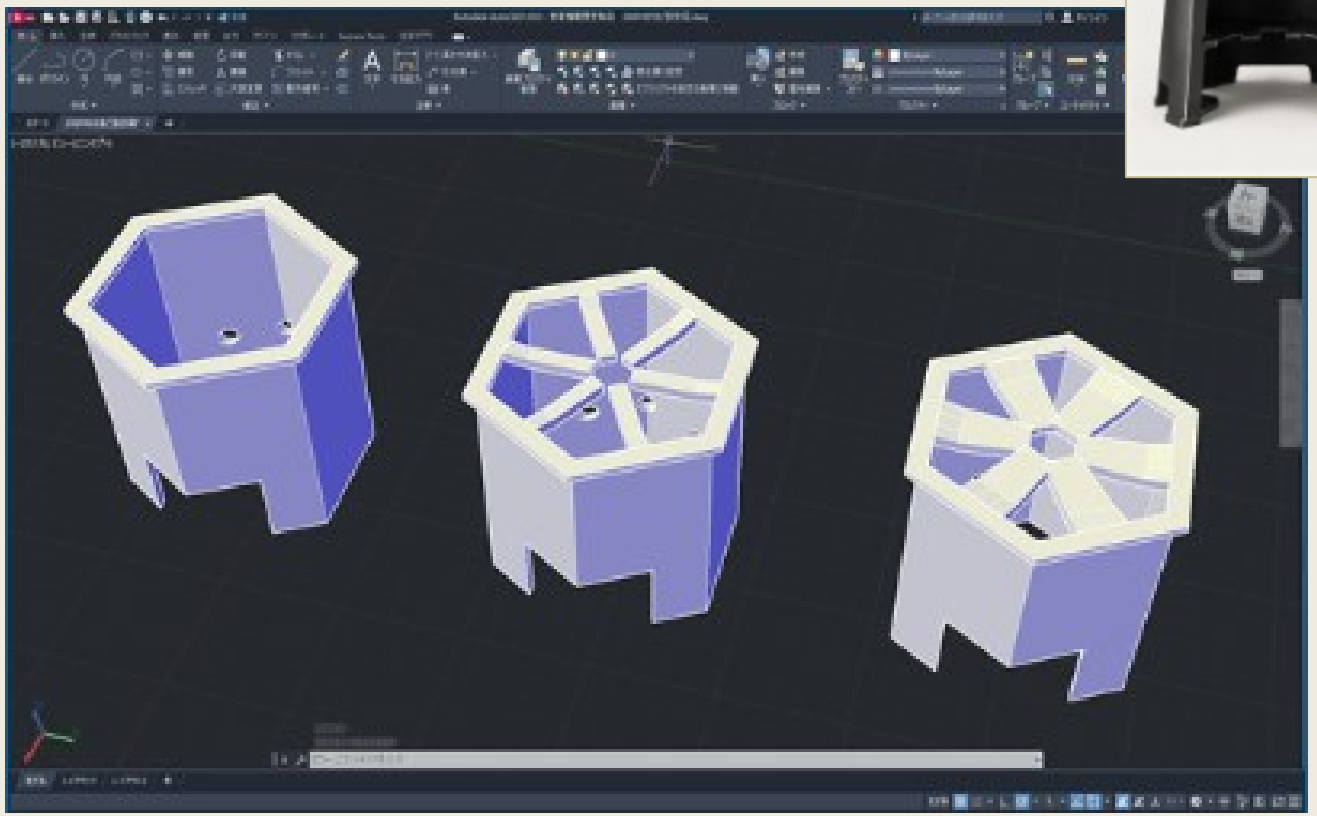
はまびより

Design





Conceptual image



Draft design created using 3D CAD



AI-generated final image

Scenes from Pre-study Meeting of Tsuruga International Symposium 2026









Scenes from Pre-study Meeting of Tsuruga International Symposium 2026







Moving forward...

- Manufacture of Kamado benches
- Promoting better public understanding of clearance metals nationwide

Continuing on...

Manufacturing using clearance metals
Promoting public understanding of clearance metals



