Transforming The Way We Clean

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Residential & Dining Enterprises

Stanford University

stars

Residential & Dining Enterprises
STANFORD UNIVERSITY
Creating a Culture of Excellence

We build a sustainable future through collaborating with students, staff and academic departments to foster behavior change and drive efficiency through long term investment in our operations.

1/3
of campus

319
buildings

525
leased spaces

7.5m
gross square feet

15k
residents

8
Dining Halls

3.5m
meals served annually

Stanford's High Level Goals

2021

100% Renewable Electricity

2025

80% Carbon Free

2022 R&DE Goal

10% Reduction in Energy and Water Usage from 2017 Levels

2030

Zero Waste Campus

2025 R&DE Goal

100% Ozone Based Cleaning

*except for degreasing and oven cleaning

Stanford Central Energy Facility

Opened in 2015 reducing greenhouse gas emissions for the university by 64% and potable water by 18%.

Transforming The Way We Clean

Traditional Cleaning | Green Cleaning | Ozone Cleaning

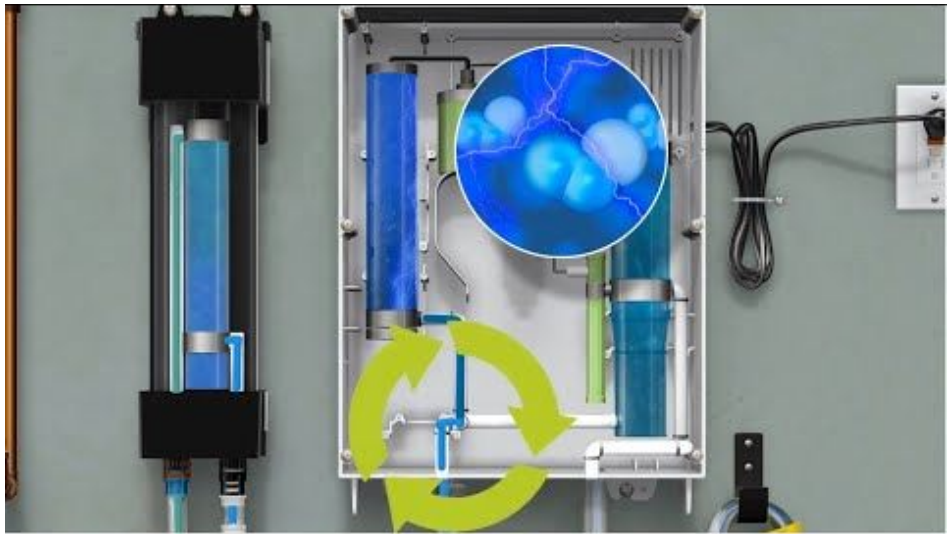
Green cleaning *refers to using cleaning methods and products with environmentally friendly ingredients and procedures which are designed to preserve human health and environmental quality. Green cleaning techniques and products avoid the use of products which contain toxic chemicals, some of which emit volatile organic compounds causing respiratory, dermatological and other conditions.*

Transforming The Way We Clean

What is Ozone Cleaning? (Engineered Water)

The cleaning system transforms ordinary tap water into a great natural cleaner by infusing it with ozone - 4,500 volts of electricity add an extra oxygen molecule to O2, creating O3. This O3 is then infused into cold tap water to create ozone able to clean up to 24hrs.

Ozone is created naturally when sunlight adds an extra oxygen atom to some of the O2 molecules in the air.



Tersano ™

Transforming The Way We Clean

Ozone Cleaning

- It converts safely back to tap water and oxygen.
- Eliminates germs, odors, stains, mold, and mildew.
- Quickly kills viruses and bacteria.
- More powerful and faster acting than bleach.
- Safe and effective with no toxins, carcinogens, or chemical residue.
- Supports our zero waste goal. Reduces plastic pollution - and more.
- Eliminates hazardous chemical disposal and regulatory compliance.
- Eliminates chemical ordering, inventory, and distribution needs.
- PPE nice, but not required.
- “No” smell.
- Reduces chemical inventory, training needs and risk.

Transforming The Way We Clean

Traditional cleaning cart with over 30 chemicals inventoried to only 2 solutions.

Transforming The Way We Clean

Delta Delta Delta

Ozone Cleaning

VS

Pi Beta Phi

Traditional Cleaning

Transforming The Way We Clean

Delta Delta Delta

Ozone Cleaning

VS

Pi Beta Phi

Traditional Cleaning

- Pre and post occupant surveys revealed students felt their residence was “just as clean as it was with the old chemicals”.
- Positive custodian feedback and satisfaction.
- Bacteria testing proved it was just as good + kept surfaces cleaner longer.

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2.5-5.5

Payback Period

- This only included chemical savings, no employee health or environmental savings, or the cost of receiving and distributing chemicals across our system.

+ This did not include electrical or plumbing upgrades needed for custodial closets. **Conveniency** is important to us.

Transforming The Way We Clean

+4000 gal

annual avoided chemical purchase and disposal

70

buildings

3m

gross square feet

8,800

residents benefiting

+85 FTE

custodians benefiting

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50% of Stanford students live in apartments they clean themselves. A student access pilot introduced 289 students to the new system, that could save them over $10,000 a year in chemical purchases and laundry detergent.

Transforming The Way We Clean

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Coming in 2020 2,400 grad students will dispense engineered water from their laundry rooms to clean their apartments.

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Creating a New Cleaning Culture

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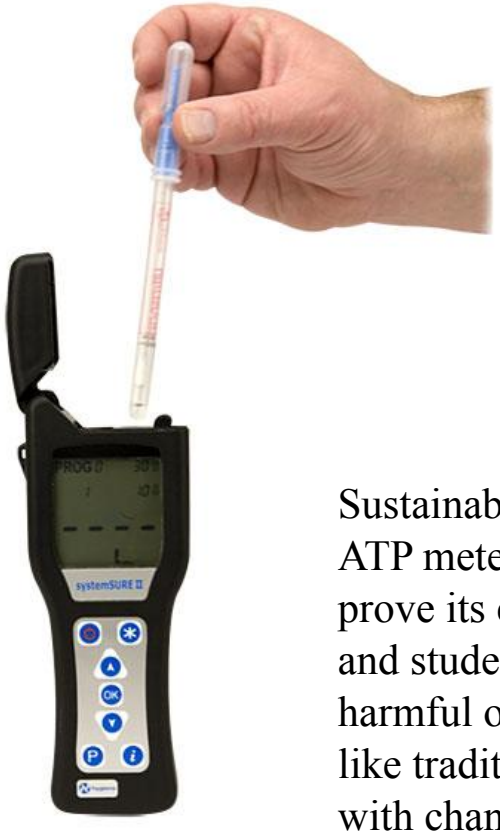
Creating a New Cleaning Culture

Prove it works… over and over again.

ORP Meter



ATP Meter

Sustainability staff measure bacteria levels using an ATP meter pre and post the new cleaning solution to prove its effectiveness with staff, building managers and students. The green cleaning solution has no harmful odor, looks like water and does not bubble like traditional cleaners so bacteria testing is helpful with changing culture.

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Creating a New Cleaning Culture

Invest in new custodial equipment: microfiber mops and towels, new mop buckets and spray bottles.

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Creating a New Cleaning Culture

\+

Stainless Steel and Mirrors.

No smell.

\-

Whitening.

Clear up confusion.

Transforming The Way We Clean

Creating a New Cleaning Culture

"It is ok it's not white. It does not mean its not clean."
(We changed our grout standard.)

"Sustainability is a core value we strive to integrate in to every level of our operation. Adopting engineered water as our green cleaning standard just made common sense.... it is great for our custodians health, it reduces our operating expenses and impact on the environment all while keeping our residences just as clean and safe for students."

– Imogen Hinds Senior Director of Stanford R&DE Student Housing Operations

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Creating a New Cleaning Culture

Academic partnerships led to new insight on program adoption amongst custodians and student awareness of the new system.

d. HASSO PLATTNER
Institute of Design at Stanford

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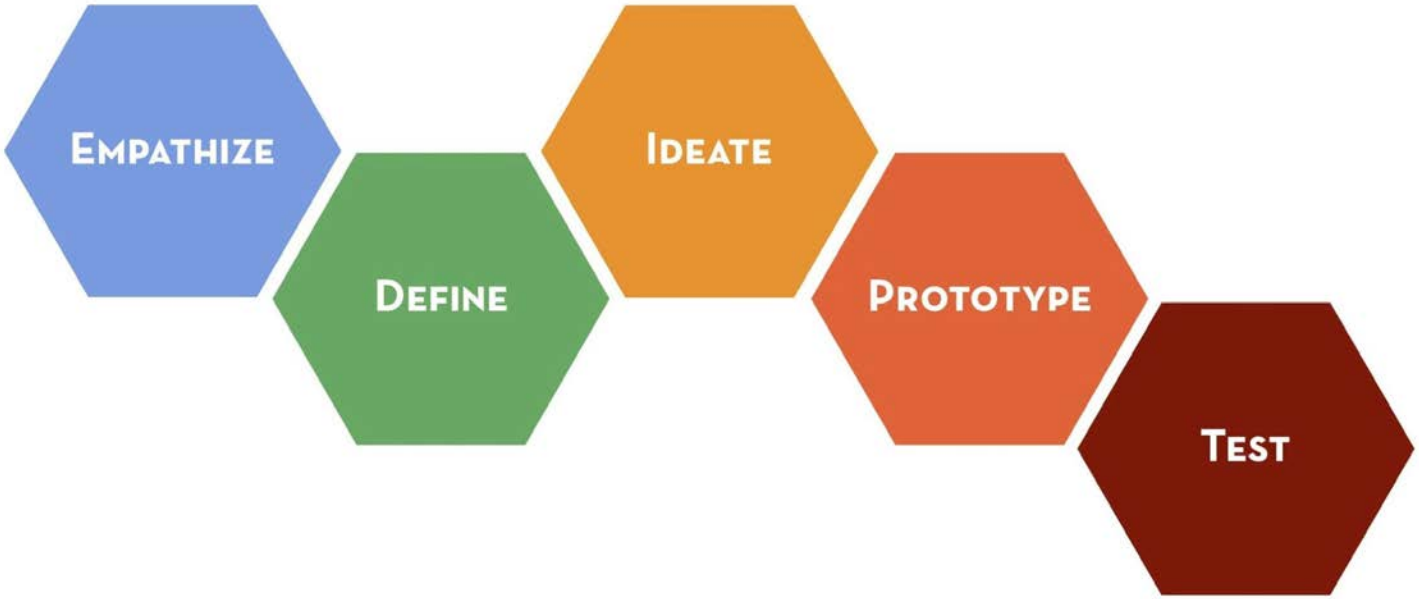
Creating a New Cleaning Culture

d.

HASSO PLATTNER
Institute of Design at Stanford



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Creating a New Cleaning Culture

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Creating a New Cleaning Culture

New to Stanford?
Healthy cleaning is our standard.
We only clean with two solutions:
SAO and ProScrub.

Where do I use SAO?

SAO is a multipurpose cleaner, disinfectant and kills mold and mildew. SAO is not bleach. It won't make surfaces white but that's okay!

Use it Everywhere:

Toilets · Counters · Glass · Floors · Carpet

Fill up a small cup to wash your next load of microfiber cloths and mop heads.

How to dispense SAO

***(Stabilized Aqueous Ozone)*:**

1. Put spray bottle in sink, insert yellow nozzle and turn on cold water.
2. Turn machine on to fill up spray bottle or bucket.
3. Turn machine and cold water off or the machine will be ruined.

Where do I use ProScrub?

ProScrub is a degreaser.

Use it on areas with a lot of buildup:

Showers · Kitchenettes

Once you've cleaned the surface with ProScrub, rinse the location with SAO to disinfect the area.

How to dispense ProScrub:

1. Insert nozzle and turn on cold water.
2. Pull the handle and the ProScrub will start dispensing.
3. Turn off cold water and remove bottle.

What is engineered water?

This cleaning system transforms ordinary tap water into a great natural cleaner by infusing it with ozone.

Ozone is created naturally when sunlight adds an extra oxygen atom to some of the O2 molecules in the air.

Sustainable R&DE
FOOD & DINING PROGRAMS

Questions, concerns, or feedback? Let us know by emailing Kristin Parineh at kparineh@stanford.edu

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Thank You for Going

Cardinal Green

Your Residence is One of the First R&DE Student Housing Residences to Use the New Green Cleaning System

What is the new cleaning system? This cleaning system transforms ordinary tap water into an effective natural commercial cleaner by infusing it with ozone. Ozone is created naturally when sunlight adds an extra oxygen atom to some of the O_2 molecules in the air. It is Green Seal Certified, 100% chemical free and converts safely back to water.

How does it compare to traditional cleaners? It is 3000 times faster and much stronger than bleach and chlorine-based cleaners. It kills the same types of viruses and bacteria. It can be used on any surface, from toilet bowls to bedspreads. It reduces the number of chemicals used in the house and their destructive properties on the environment and human health. Because it is made of water and oxygen it is a non-irritant, non-caustic and has no allergy concerns.

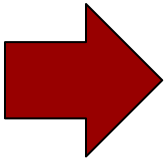
Your custodian will be implementing the new system throughout the residence.

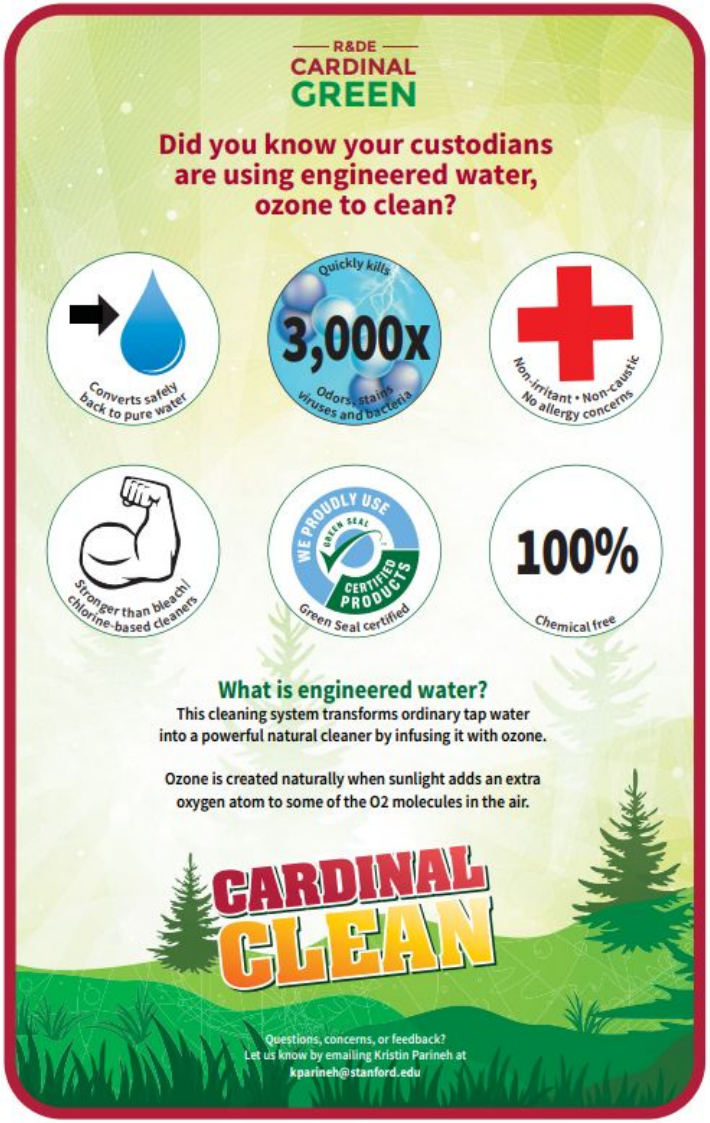
Do you have concerns or feedback for us?
Email R&DE's Sustainability and Utilities Manager Kristin Parineh at kparineh@stanford.edu

Sustainable R&DE
FOOD & LIVING PROGRAMS


FREE CLEANING SOLUTION FOR:
✓ Glass
✓ Counter Tops
✓ Floors
✓ Toilets
✓ Carpets
✓ Laundry
Advanced Cleaning Solution
CARDINAL CLEAN
✓ Only lasts as a sanitizer for 24 hours, fill up a new bottle every day.
R&DE
CARDINAL GREEN
CARDINAL CLEAN
✓ Only lasts as a sanitizer for 24 hours, fill up a new bottle every day.
✓ Use me on all surfaces
✓ I prevent mildew and mold from growing back
✓ This bottle should only be used for SAO
STABILIZED AQUEOUS OZONE
Health 0
Fire 0
Reactivity 0
Personal Protection X
CONTENT
Water + up to 2 ppm of ozone in water
For use with Aqueous Ozone only
See SDS for more information

Transforming The Way We Clean





R&DE
CARDINAL
GREEN

At Stanford, healthy cleaning is our standard. We only clean with two solutions: SAO and ProScrub.

Where do I use SAO (Stabilized Aqueous Ozone):

SAO is a multipurpose cleaner, sanitizer and kills mold and mildew. SAO is not bleach. It won't make surfaces white but that's okay!

- ✓ Glass
- ✓ Floors
- ✓ Carpets
- ✓ Counter Tops
- ✓ Toilets
- ✓ Laundry Detergent

How to dispense SAO:

1. Turn on cold water and machine. Wait for green light.
2. Fill spray bottle or bucket.
3. Turn machine and cold water off or the machine will be ruined.

Where do I use ProScrub?

ProScrub is a degreaser.

Use it on areas with a lot of buildup:

- ✓ Showers
- ✓ Kitchenettes

Once you've cleaned the surface with ProScrub, rinse the location with SAO to sanitize the area.

How to dispense ProScrub:

1. Insert nozzle and turn on cold water.
2. Pull the handle and the ProScrub will start dispensing.
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CARDINAL CLEAN

What is Ozone, engineered water?

This cleaning system transforms ordinary tap water into a great natural cleaner by infusing it with ozone.

Ozone is created naturally when sunlight adds an extra oxygen atom to some of the O2 molecules in the air.

Questions, concerns, or feedback?
Let us know by emailing Kristin Parineh at kparineh@stanford.edu

R&DE
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En Stanford limpieza saludable Es nuestro estándar. Solo limpiamos con dos soluciones: SAO y ProScrub.

¿Dónde usar SAO (Stabilized Aqueous Ozone)?

SAO, también conocido como Tersano, es un producto de limpieza que funciona para limpiar, desinfectante, y moho. SAO no es lo mismo que blanqueador. No blanquea superficies, pero funciona muy efectivamente.

- ✓ Piso
- ✓ Mesa
- ✓ Alfombra
- ✓ Vidrio
- ✓ El baño
- ✓ Detergente de lavandería

¿Cómo dispensar SAO?

1. Abra el agua fría y la máquina. Espera la luz verde.
2. Llene la botella de spray o el balde.
3. Apague la maquina y el agua fría o la maquina se ruina.

¿Dónde uso ProScrub?

ProScrub es un desengrasante.

Úselo en áreas de mucha suciedad:

- ✓ La ducha
- ✓ Cocinitas

Cuando ha limpiado la superficie con ProScrub, enjuague con SAO (Tersano) para desinfectar el área.

¿Cómo dispensar ProScrub?

1. Ponga la botella de spray para ProScrub y prenda el agua fria.
2. Jale la palanca para dispensar ProScrub.
3. Apague el agua fría y remueva la botella.

CARDINAL CLEAN

¿Qué es el ozono, el agua de ingeniería?

Este sistema de limpieza transforma agua regular a un limpiador natural por infusión de ozone.

Ozone es una mezcla natural en el aire.

Si tiene preguntas o comentarios, envíe un correo electrónico a Kristin Parineh kparineh@stanford.edu

Transforming The Way We Clean

Creating a New Cleaning Culture

Recognize champions - Awards, Dining Lunches, Letting them Lead. When you are no longer needed you have succeeded in culture change.

BUILDING A SUSTAINABLE FUTURE

Questions?

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