



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG

Action to save energy:

Reduced air flow rate in the laboratories

Eine Unterweisung für Mitarbeitende im Institut für Biochemie, ZEA,
Chemisches Untersuchungsamt und Ausbildungslabor

24.01.2024



Foto: UHH/Möller

Agenda

- 1 Introduction – Ms. Passet (on behalf of Department / Institute)
- 2 Technical Background– Mr. Ihde
- 3 Occupational health and safety concerns – Ms. Passet
- 4 Outlook, Procedure
- 5 Questions



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Introduction



Proactive contribution to save energy

Sustainability and projects to save energy at Chemistry Department were topics being discussed on a Scientific Staff Retreat in spring 2023.

First Project is now being put into action:

Reduced air flow rate in the laboratory fumes during night time in VG II/Grindelallee 177 (Pilot Building)

Institutes AC, OC, TMC, PAI will follow shortly

This action will save at least 158,000 kWh at Chemistry Department.

The amount roughly equals the annual consumption of 37 one-family houses.

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Technical Background



Technical Background

Source TRGS 526 Laboratories:

Laboratories must be equipped with sufficient and adequate (mechanical) ventilation systems that are active at all times.

Exhaust air may be discharged either completely or partially via fume hoods.

An exchange rate of $25\text{m}^3/\text{h}$ per m^2 must be maintained to ensure a proper and safe work environment.

NEW:

Ventilation is reduced by approx 30% :

Mo.-Fr. from 9 pm to 5.00 am, all day on Saturdays, Sundays and on public holidays.

Technical Background

If air flow and ventilation is not at 100% certain tasks in the lab are prohibited unless the fume hoods are switched back to 100% manually.

If labwork must be carried out during times when ventilation and airflow is reduced please observe the instructions near the panels to activate 100% to ensure safe working conditions.

Remember to switch back to energy-saving mode when you are done with your experiments!

New signs on lab doors

ACHTUNG! REDUZIERTER LUFTWECHSEL

**In den Zeiträumen Montag bis Freitag 21.00 - 05.00 Uhr
sowie samstags, sonntags und an Feiertagen ganztägig
sind Arbeiten in den Laborabzügen nur bei Einschaltung
der Zusatzabluft zulässig.**

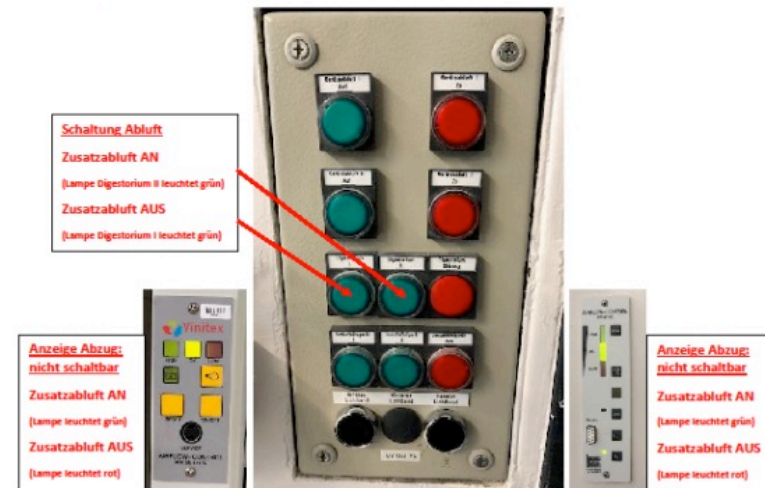
*This sign will now
be placed on the
outside of all lab
doors.*

Instruction

This instruction can now be found near switch panels in the labs

Reduzierter Luftwechsel

Zur Nutzung des Laborabzuges während reduziertem Luftwechsel von Mo.-Fr. 21:00 – 05:00 + Samstags / Sonntags / Feiertags vor Beginn der Arbeiten den dargestellten Taster für die Zusatzabluft betätigen (**Zusatzabluft AN**)!



Aus Gründen der Energieeinsparung schalten Sie die Zusatzabluft nach Beendigung der Arbeiten wieder aus (**Zusatzabluft AUS**)!

Gebäude	Typ
TC	Vinitex / Bense

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Occupational health and safety issues



Occupational health and safety concerns

First and foremost: awareness and behavioral adjustment is required !

Before measures or actions can take place, the occupational health and safety measures must be adjusted accordingly :

- Risk assessments
- Operating instructions for laboratories
- Regulations concerning work outside of operating hours /working alone in labs
- Regulations for long-term experiments
- Instruction templates
- Check implementation (are long-term tests designed safely, are sashes lowered, people in the lab?...)

Occupational health and safety concerns

Templates „Gefährdungsbeurteilung für den Arbeitsbereich Labor und Laborbetriebsanweisung des FB Chemie“ have been updated.

Both forms are available through Webpage of Arbeitssicherheit (Occupational safety):

<https://www.chemie.uni-hamburg.de/service/sicherheit-und-entsorgung/formulare.html#v-15123777>

[Formulare : Fachbereich Chemie : Universität Hamburg \(uni-hamburg.de\)](https://www.chemie.uni-hamburg.de/service/sicherheit-und-entsorgung/formulare.html#v-15123777)

These forms have to be filled in or updated by each group.

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Procedure

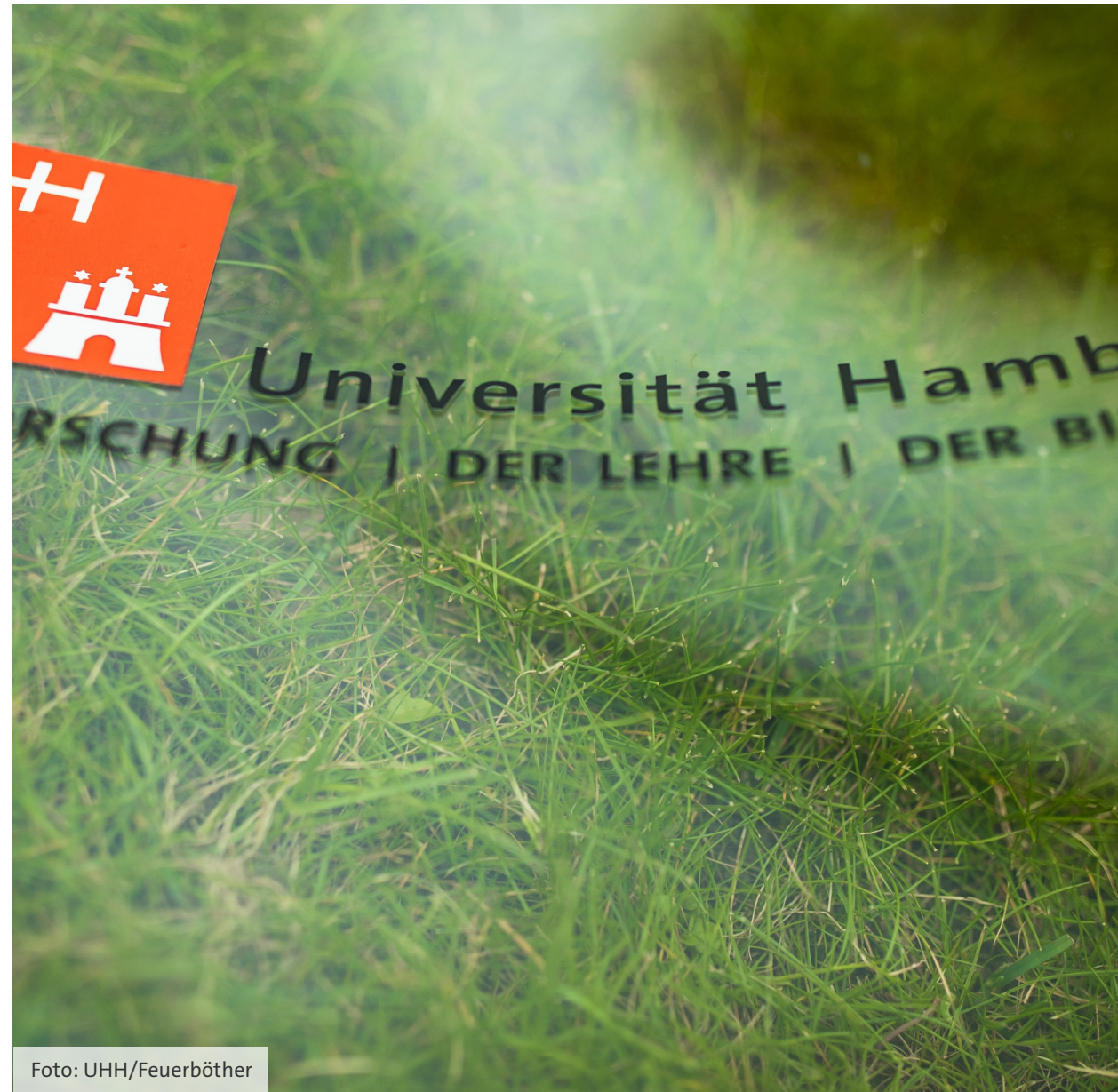


Foto: UHH/Feuerböther

Timeline

4. Quarter 2023

01.11.2023

Start: night-reduction in VGII
LC, PC, Fraunhofer/CAN

1. Quarter 2024

Institute BC I and II

2. Quarter 2024

Institutes AC and OC

3. Quarter 2024

Institutes TMC and
Pharmacy

Outlook / Procedure

Info to timeline

Air supply and exhaust air control is configured differently in each institute.

The options for manual activation vary in each institute.

Switching instructions must be adapted individually according to the users/institutes. Instructions have to be displayed properly.

Each institute receives an individual briefing

Health and safety documents must be adapted and updated in each research group.

Outlook & further projects

Will there be more projects on energy-saving and/or sustainability in the future ?

A sustainability team „TEAM Nachhaltigkeit“ formed at Chemistry Department to promote future sustainability strategies.

If you want to become part of this team, please contact:

marie.oest@uni-hamburg.de

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**Be the change yourself,
you wish for this world**

Mahatma Ghandi



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Questions

