

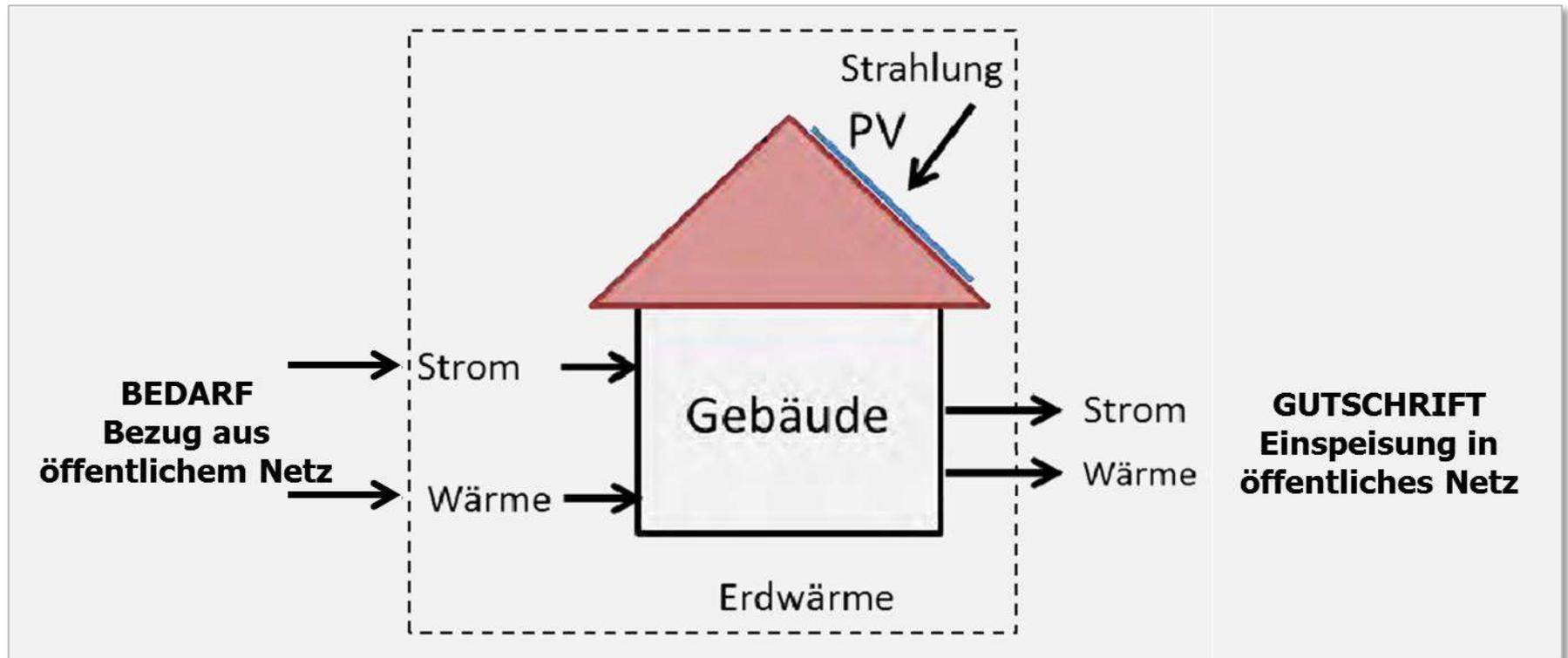
- **Ergebnisse Projekt React**
 - **Monitoring im Energetikum**
-

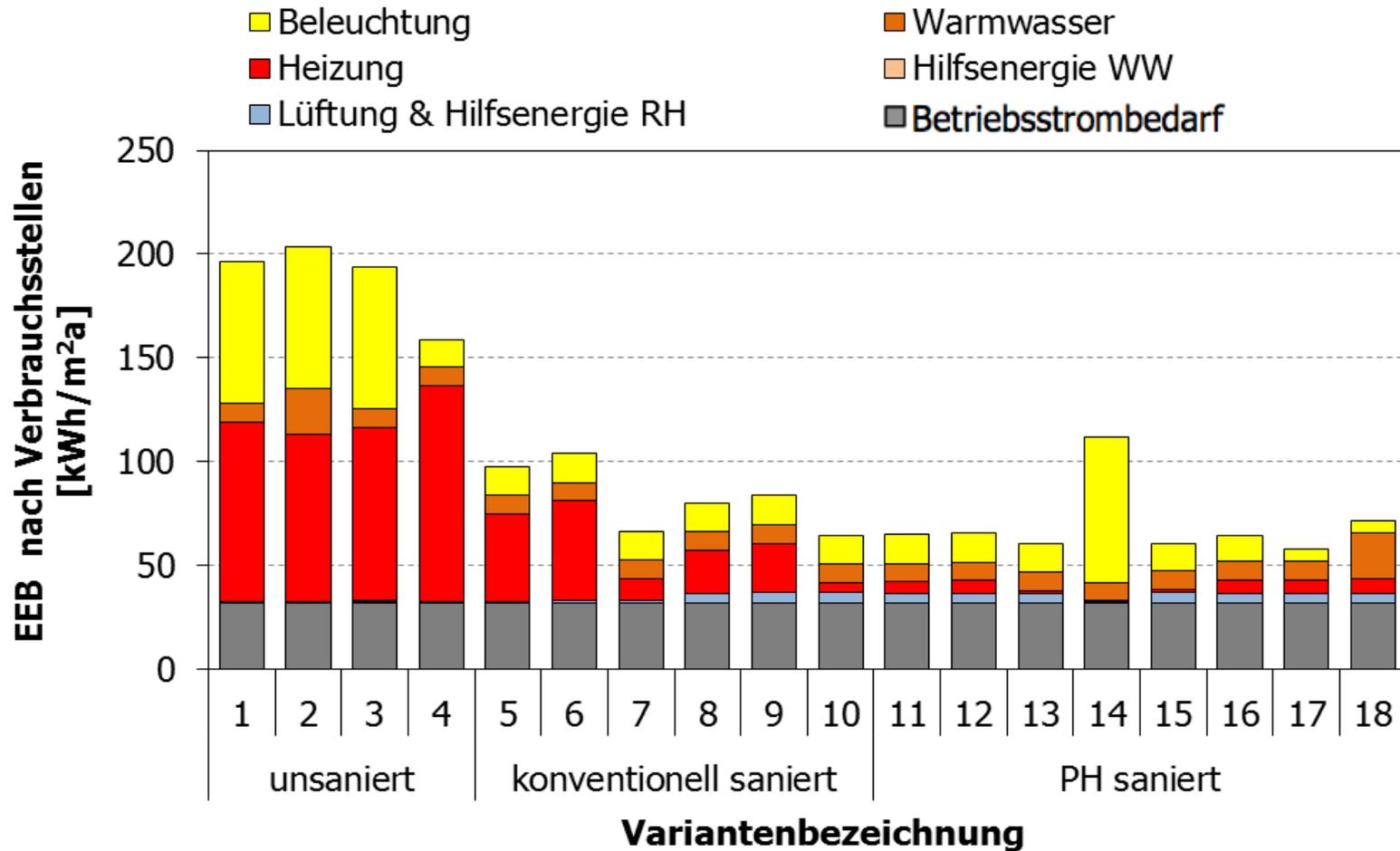
DI Hannes Hebenstreit BSc
Forschung Burgenland

- WP1 dissemination
- WP2 project management
- WP3 concepts for NZEB (single family houses)
- WP4 **concepts for refurbishment to NZEB**
(non-residential buildings)
- WP5 **qualification & education** (teaching documents for energy consultants)
- WP6 **bio & recycling fuels**
- WP7 **monitoring of NZEB** (single family houses)
- WP8 **development of building materials for NZEB**
- WP9 **test geothermal collectors**



Konzepte für NZEB Nearly Zero Energy Building





was:

- hoch energieeffiziente Einfamilienhäuser

Frage:

- Wann ist wer wie lange unter welchen raumklimatischen Verhältnissen in welchem Raum und wie viel elektrische Energie wird verbraucht?

Ergebnis:

- Nutzerprofile und Kennwerte zur Bilanzierung von NZEB's
- Vergleich gemessener Energieverbrauch und berechneter Energiebedarf

Raumklima



Stromverbrauch



ng/nk... room climate:

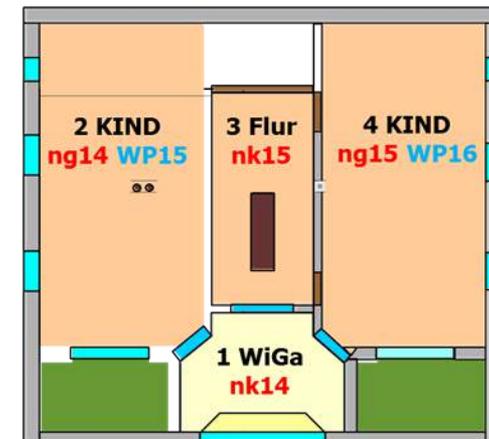
- temperature
- humidity
- CO₂
- noise

WP2, K2-3... electricity

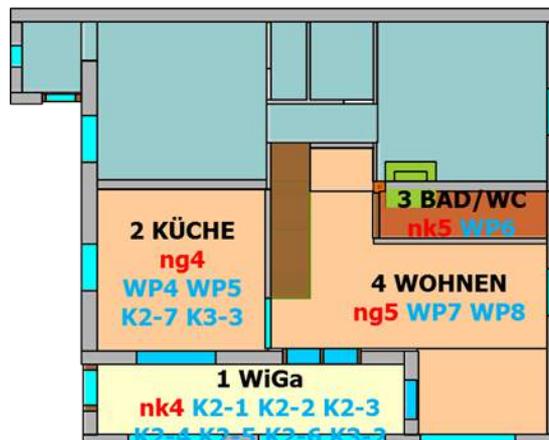
FIRST FLOOR



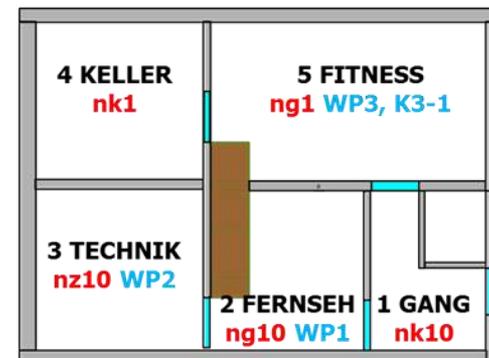
SECOND FLOOR



GROUND FLOOR



BASEMENT



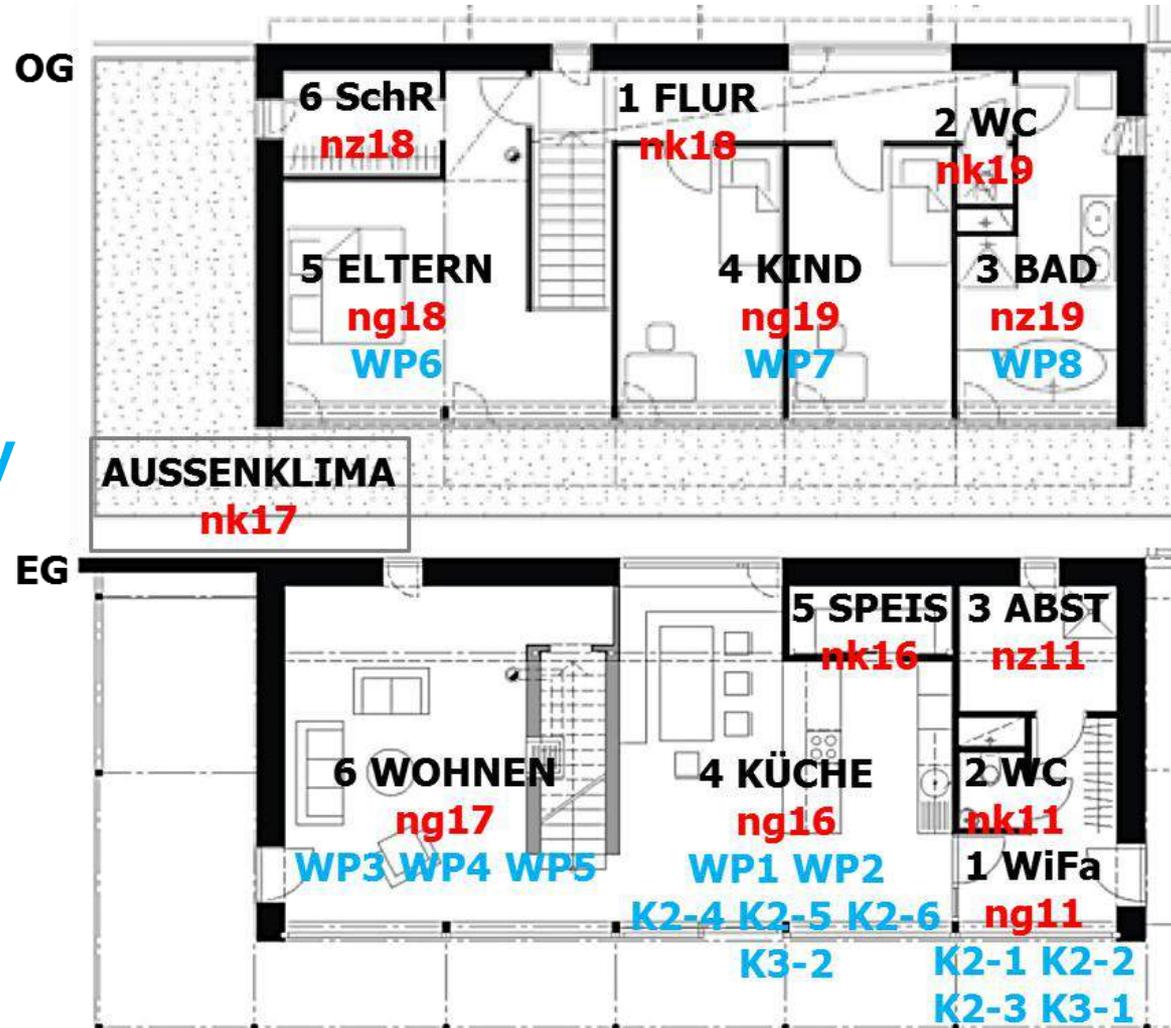
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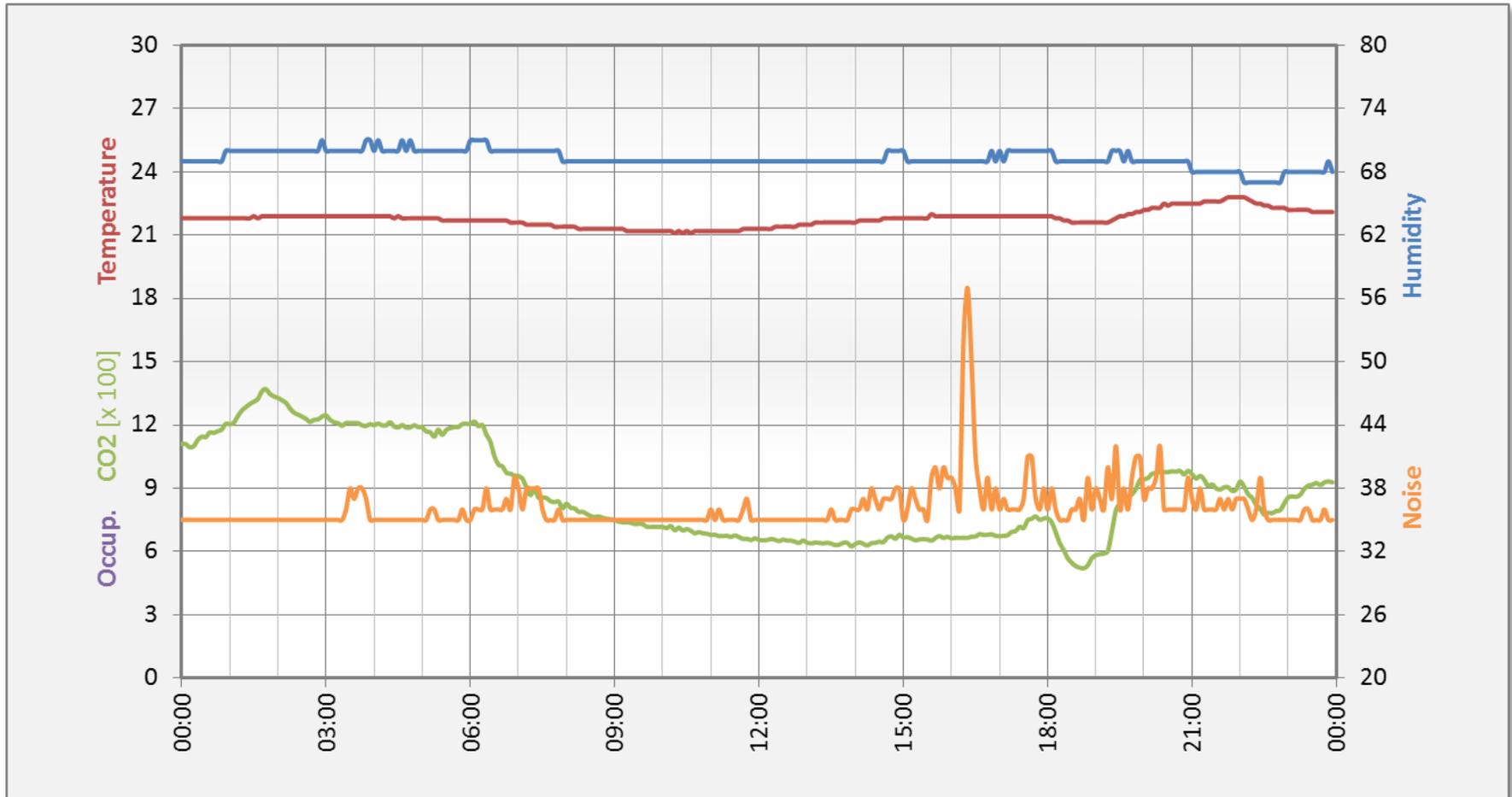
nz1

ng12... room climate:

- temperature
- humidity
- CO₂
- noise

WP2, K2-3... electricity





Mittwoch 15. Oktober, Elternzimmer: **Temperatur** **Luftfeuchte** **CO₂** **Lärm**

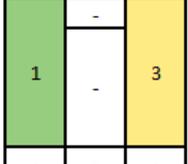
Monitoring Haus Mitte

Komfortdiagramm

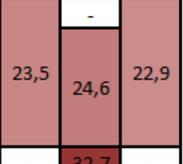
floor plan



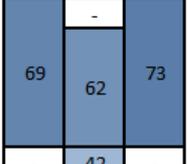
Comfort



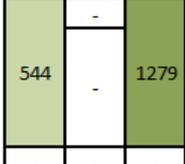
Temperature



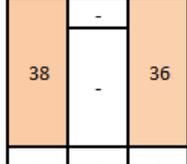
Rel. Humidity



CO₂

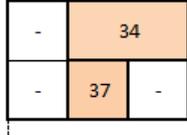
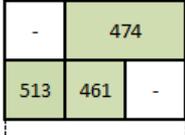
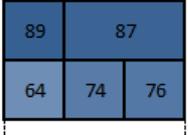
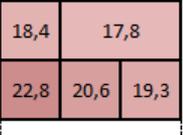
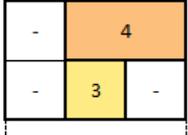
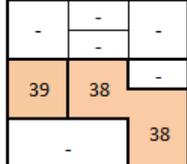
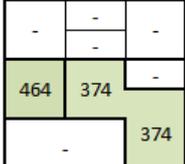
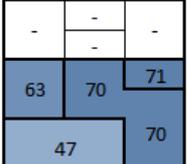
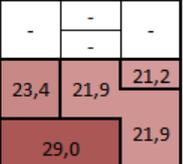
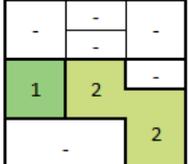
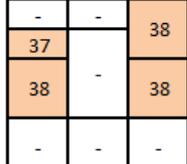
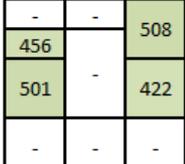
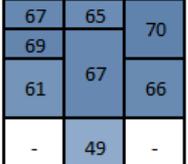
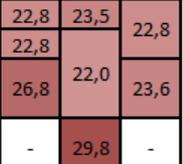
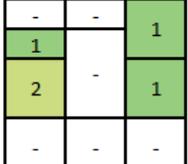


Noise

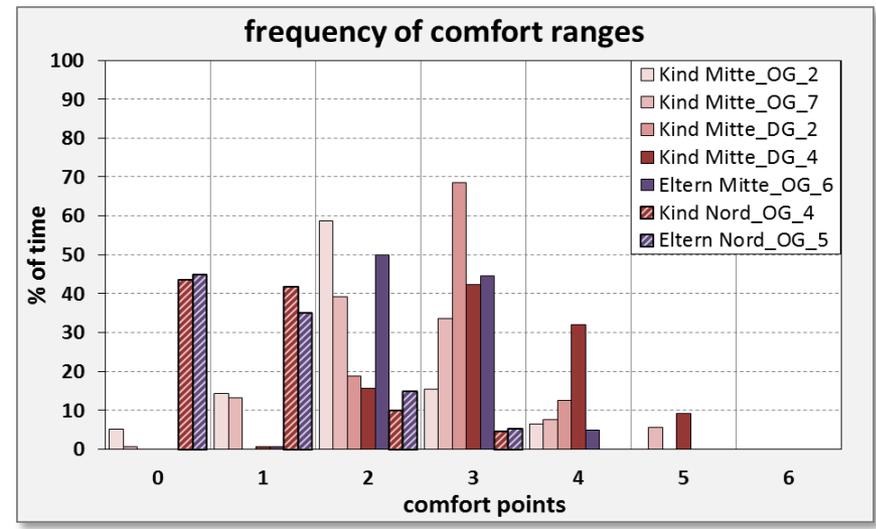
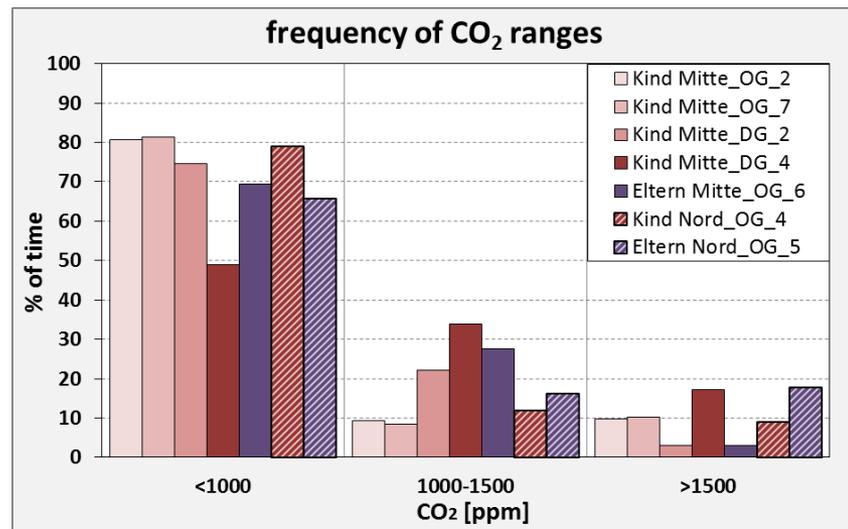
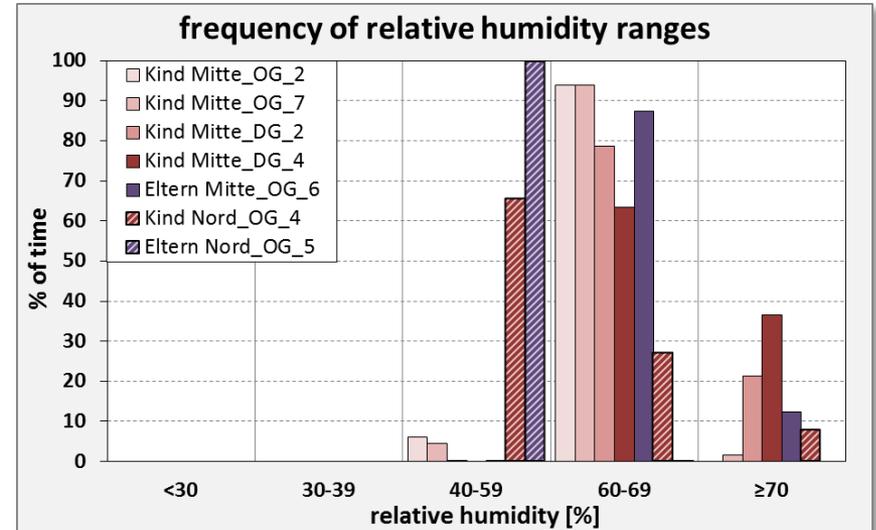
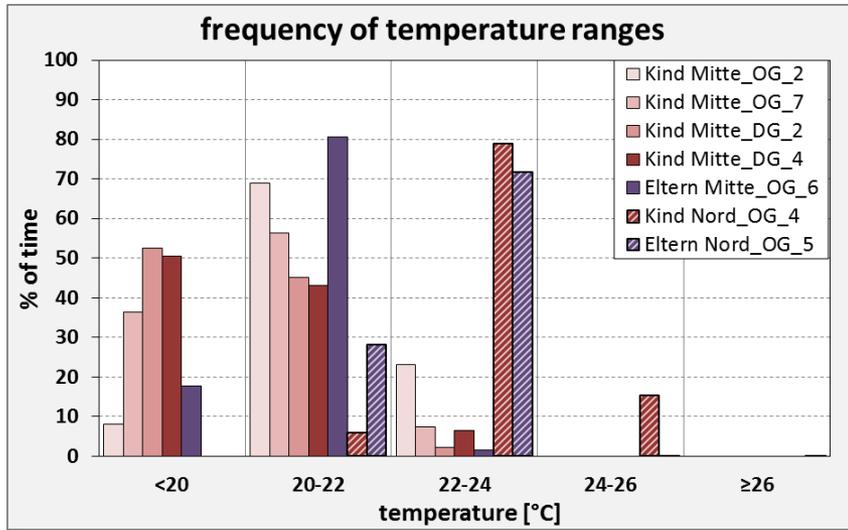


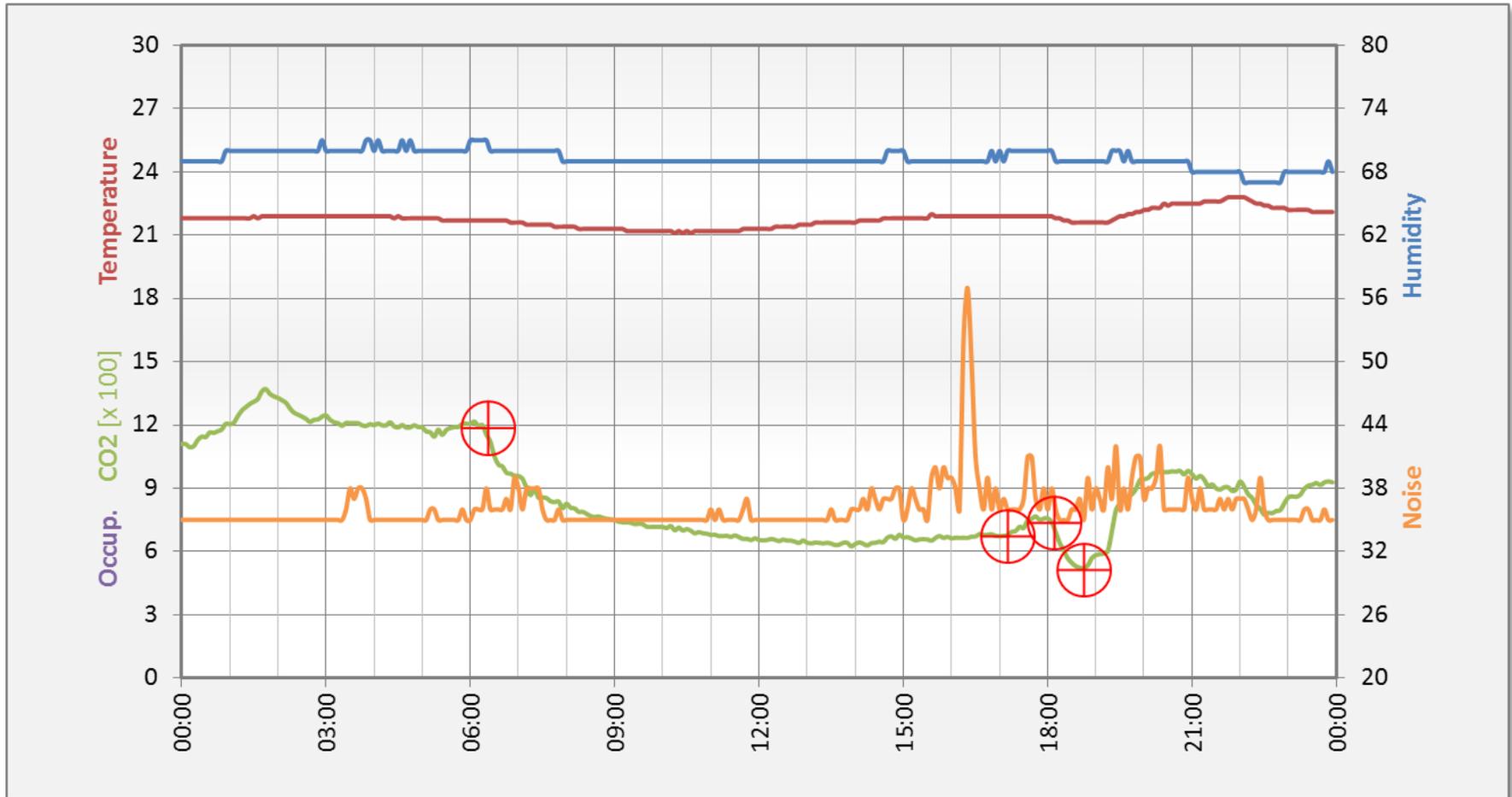
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w	d	h	m
2	DO	11	16
▲	▲	▲	▲
▼	▼	▼	▼

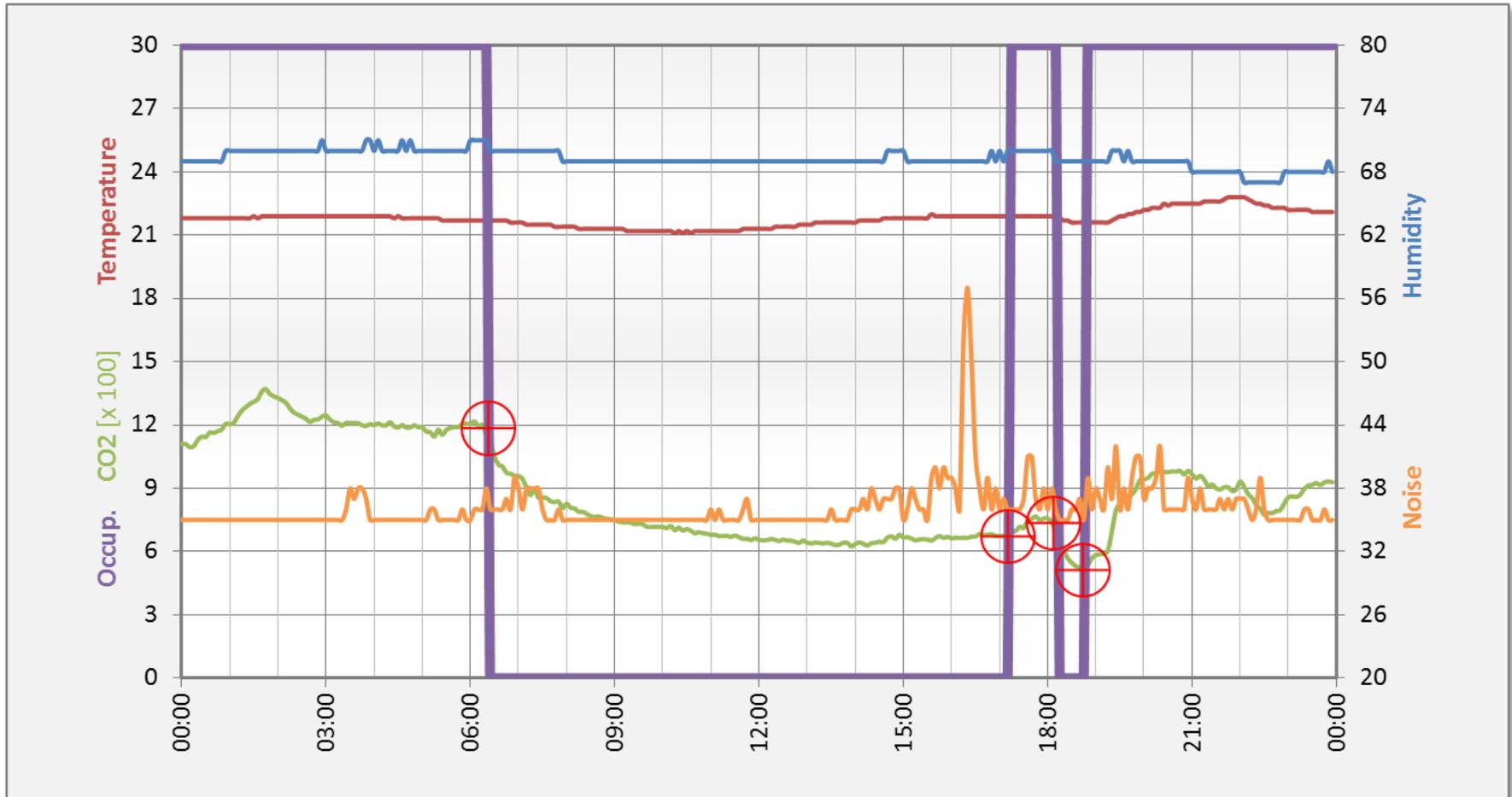


outdoor

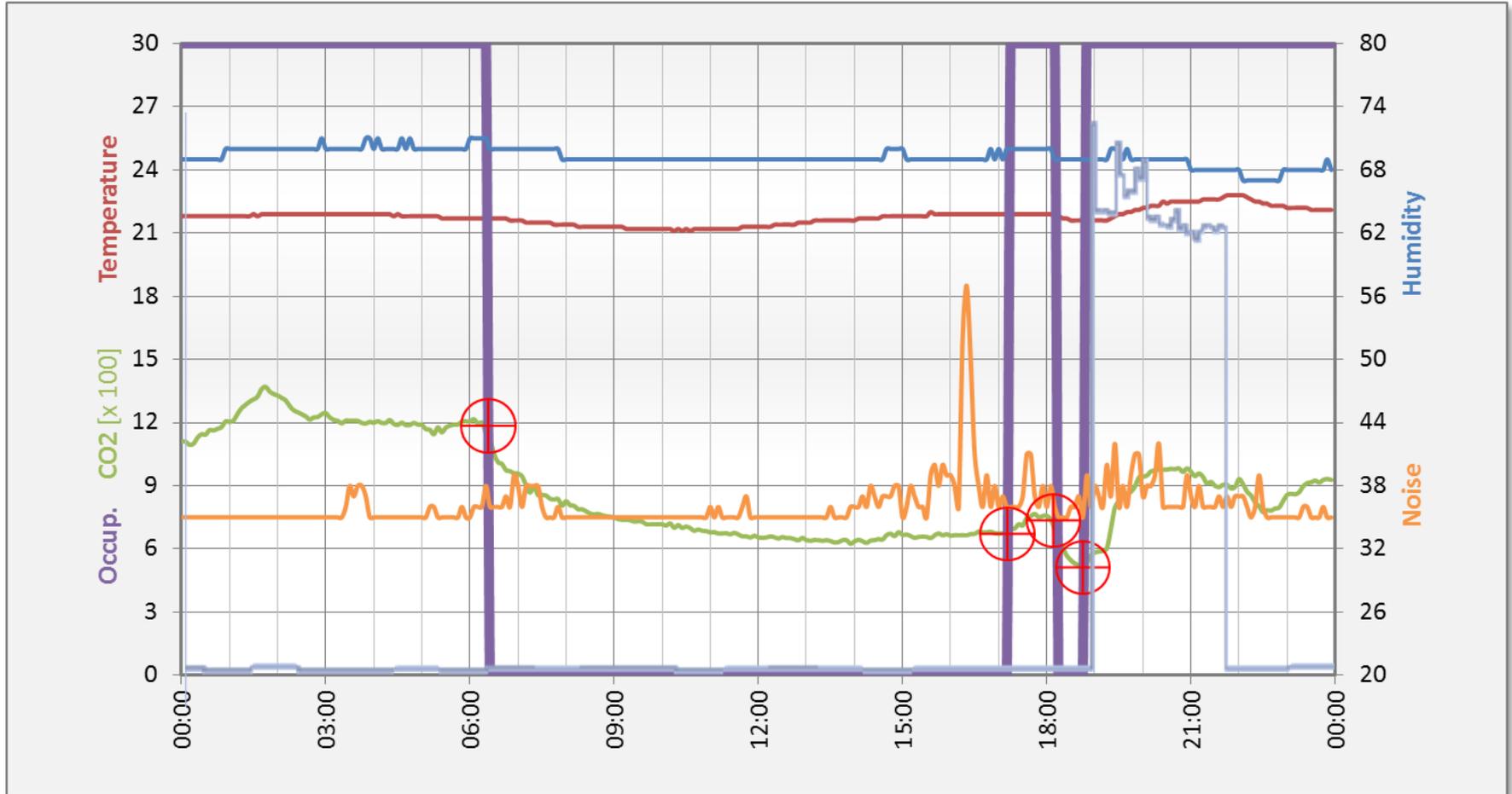




Mittwoch 15. Oktober, Elternzimmer: **markante Punkte**

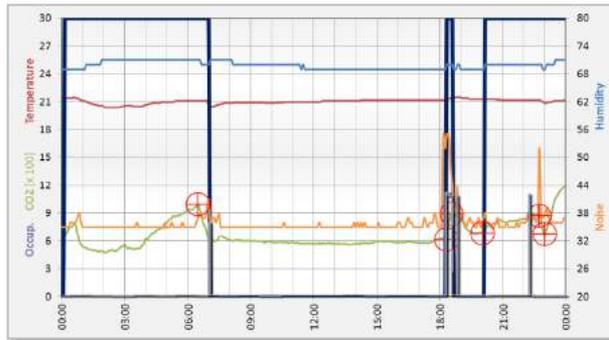
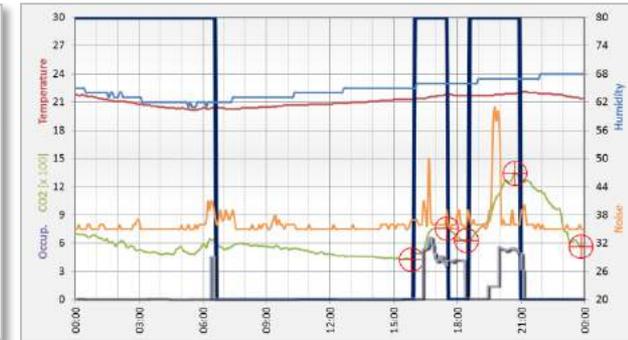
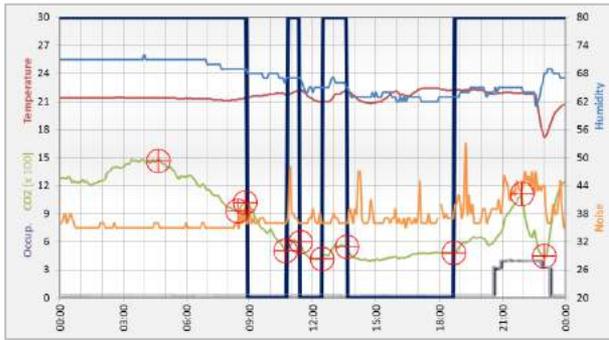
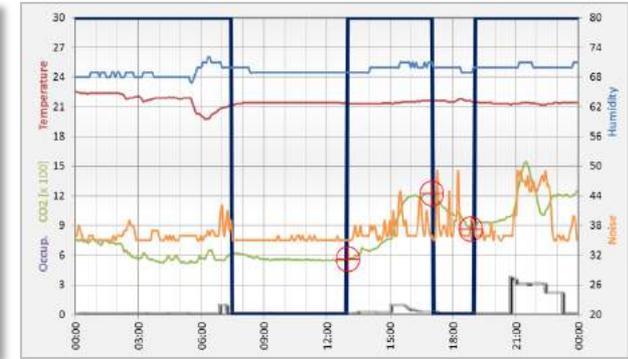
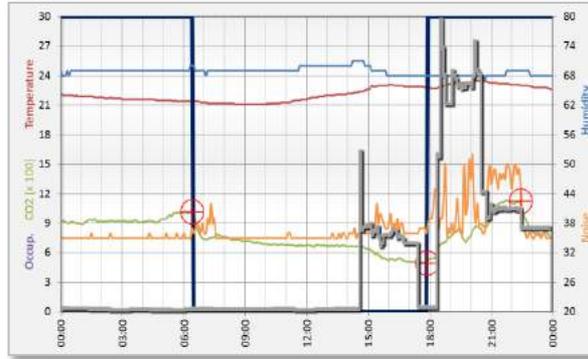
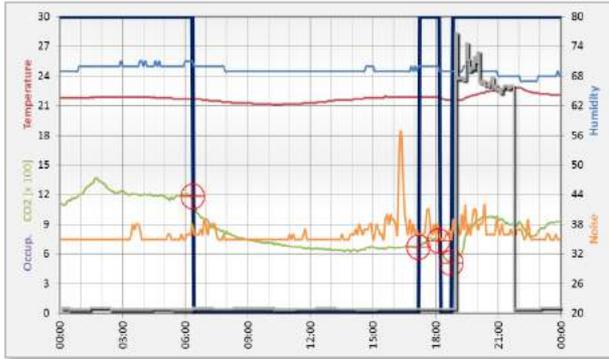


Mittwoch 15. Oktober, Elternzimmer: Anwesenheitszeiten



Stromverbrauch: 0,65 kWh/d

Anwesenheitsdauer: 12h 35' pro Tag



**Kennwerte und
Nutzerverhalten**

		Strom [kWh/d]		Anwesenheit [hh:mm/d]	
		Eltern MOG6	Kind MDG4	Eltern MOG6	Kind MDG4
15.10.2014	Mittwoch	0,18	0,55	12:35	15:40
16.10.2014	Donnerstag	0,23	0,45	12:35	15:25
17.10.2014	Freitag	0,05	0,25	16:30	16:00
18.10.2014	Samstag	0,06	0,00	15:55	10:20
19.10.2014	Sonntag	0,06	0,73	12:55	19:00
20.10.2014	Montag	0,08	0,02	10:40	13:30
21.10.2014	Dienstag	0,02	0,00	11:05	03:45
15.-21.10.2014	Woche	0,68	2,00	92:15	93:40
Durchschnitt pro Tag		0,10	0,29	13:10	13:22
Durchschnitt pro Raum		0,19		13:16	

The screenshot shows the website interface for react-ite.eu. At the top left is the 'react.' logo with the tagline 'Renewable Energy & Efficiency Action'. At the top right is the 'FORSCHUNG Burgenland RESEARCH & INNOVATION' logo. A lightbulb graphic on the right contains a landscape with a tree. The main content area features a navigation menu on the left with 'Ergebnisse' highlighted in red. Below the menu is a large image of a wind turbine with a white arrow pointing to it. On the right, there is a search bar with a 'hľadaj' button and a 'Vyhľadávanie celého textu' section. Below the search bar are 'Vzhľad' settings for font size and contrast, and a 'Meldungen' section with news items.

Language:

react.

Renewable Energy & Efficiency Action

Práve sa nachádzate na: react-ite.eu / Ergebnisse

- News
- Work Packages
- Projektpartner
- Ergebnisse**
 - WP 1 PR
 - WP 3 ZeroPlus Gebäude
 - WP 4 Sanierungskonzepte
 - WP 5 Qualifizierung & Ausbildung
 - WP 6 Treib- & Brennstoffe
- Vorgängerprojekt ITE
- Downloads
- Links
- Lageplan

Vyhľadávanie celého textu

Vzhľad

Veľkosť:

Kontrast:

Meldungen

Solar / PV-Potential ist ONLINE

Gemeinsame Vergleichende Studie der Regionen Burgenland/AT und TTSK/SK

Einladung zur EMAS Konferenz 19.



ENERGETIKUM

das interdisziplinäre Living-Lab Forschungsgebäude am Campus Pinkafeld





Ausgangslage

RICHTLINIE 2010/31/EU über die Gesamtenergieeffizienz von Gebäuden

Energiebereitstellung

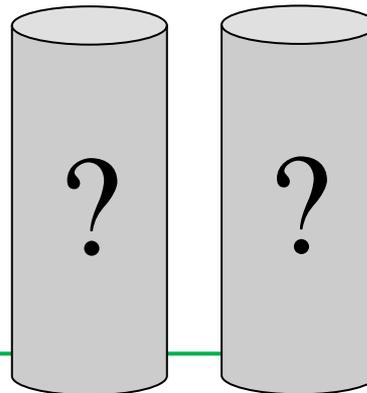


<http://commons.wikimedia.org>

Reduktion Energiebedarf



Quelle: Gira





Energetikum





Energiesystem

■ **Energieversorgung**

- Wärmepumpe (GeoExchange + Außenluftbetrieb)
- Brennstoffzelle (Scale-Versuchsanlage)
- Solarfassade (semitransparent durch variablen Sonnenschutz)
- Solarthermie & Photovoltaik (optional)
- Vollklimaanlage auf DEC-System ausbaubar

■ **Energieverteilung**

- Thermisch aktive Bauteile (Heizen & Kühlen)
 - Fußbodenheizung / -kühlung
 - Bauteilaktivierung der Decke (BKA & BKA ON)
- Luftversorgung über zentrale Vollklimaanlage
 - zonale Verteilung mit variabler Luftwechselzahl



Monitoring

■ **Monitoring**

- Energieströme
 - Erdwärmetauschersysteme
 - thermisch aktivierte Bauteile (Simulationsräume, etc.)
 - Zu- und Abluftenthalpieströme
 - Elektrische Versorgung (Beleuchtung, EDV, Zusatzgeräte)
 - Lüftungsventilatoren, Befeuchtung etc.
 - Wärmepumpe, Rückkühler etc.
 - Pumpenergie für Erdwärmetauscher, thermisch aktivierte BT
- Temperatursensoren im Erdreich 90 Stk.
- Zustand innenliegender und außenliegender Sonnenschutz
- Wetterstation.....

Zusammenfassung

- **Versuchsanlage mit realen Nutzerverhalten**
 - Speichertechnologien
 - Regelung- und Steuerung / Gebäudeautomation / Fassade
 - Integration Mikro-KWK Anlagen auf Brennstoffzellenbasis
- **Methodenentwicklung**
 - Weiterentwicklung numerischer Methoden
 - Beschreibung Nutzerverhalten
 - Regelungs- und Steueralgorithmen.....

- **Video**





Kontaktieren Sie uns !

FORSCHUNG
Burgenland
RESEARCH & INNOVATION

DI Hannes Hebenstreit BSc

Forschung Burgenland GmbH

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www.forschung-burgenland.at

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