jOiNEd For sUsTainability - bUilding climate REsilient communities in WB and EU

Lund University

Study visit

Date: 20230613
Place: Lund

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Co-funded by the European Union

Aim of the study visit

- To present how Lund University implement climate and sustainability actions, related to:
  - Curriculum development
    - What we teach?
    - How we teach?
  - Instruments to stimulate teaching and research on sustainability
  - Actions for/examples of research collaboration
  - Measures not related to teaching – university services, campus development, etc.

Co-funded by the European Union

AGENDA

June 13th 2023 – Study Visit – Day 1

Venue: Pufendorfinstitutet. Room Hörsalen. Address: Biskopsgatan 3

09.00-09.30	**Registration, Coffee, Welcome and practicalities**
	Henrik Hassel, Head of division of risk management and societal safety
09.30-12.00	**Overview of Lund University initiatives for sustainable campus and university services & Tour around campus**
	Sustainability at Lund University – an overview, Claes Nilén, Environmental manager and Maria Nilsson, Environmental coordinator
	Sustainability at the university's landlord Akademiska Hus, Li Lövehed, Manager energy and sustainability
	Circular economy and reuse, Carolina Rijpma, Manager interior design
	Chemical safety, Anikó Wendler, Coordinator chemical and biochemical safety
	Sustainable campus and facilities, Ulla-Britt Persson, Facilities planner
	Walk through campus area with highlights, Ulla-Britt Persson, Facilities planner
12.00-13.00	**Lunch**
13.00-14.30	**Introduction to Sustainability forum and Agenda 2030 Graduate School**
	Jenny Hansson, Project manager at Sustainability Forum, Terese Thoni, Education coordinator at Sustainability forum & Ylva van Meeningen, Research administrator for Agenda 2030 Graduate School at Centre for Environmental and Climate Science (CEC)
14.30-15.00	**H+Forest – The campus of the future – Perspectives for sustainable development based on students' needs and behaviors**
	Sofia Ritthammer, Project assistant at the Division if risk management and societal safety
15.00-15.15	**Coffee**
15.15-16.00	**Lund University Innovation: Strategic-Sustainability-Analysis**
	Nicolas Arriagada & Peter Frank, Innovation developers at LU Innovation

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1FUTURE

1FUTURE

June 14th 2023 – Study Visit – Day 2

Venue: LTH Studiecentrum (LTH study center). Room: Pepparholm. Address: John Ericssons väg 4 (500 m walk from the guest house).

09.00-09.50	**Teaching sustainability on the Master program of Disaster Risk Management and Climate Change Adaptation** *Magnus Hagelsteen, Program director & Per Becker, Professor in Risk and Sustainability*
09.50 – 10.20	**Teaching sustainability on the Master program of Fire Safety Engineering** *Margaret McNamee, Professor in Fire Safety Engineering*
10.20-10.50	**Coffee**
10.50-11.30	**What are important components when teaching sustainability?** *Ann Åkerman, Deputy Director at Lund University Centre for Sustainability Studies*
11.30-12.00	**LU support service concerning coordination of cross-disciplinary projects in sustainability** *Johanna Generosi – Project manager at LU coordination and innovation*
12.00-12.45	**Lunch**
12.45-13.15	**Supporting teachers at LTH to teach about sustainability** *Mirjam Glessmer, Pedagogical developer at Centre for Engineering Education (CEE)*
13.15-15.15	**Teaching complex and systemic sustainability topics with serious games and practical focus on biodiversity and climate** *Lea Levy, Associate senior lecturer at Engineering Geology*
15.15-16.00	**Summary and final discussion** *Mirjam Glessmer and Henrik Hassel*

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Thank you for your attention

Contact info about the presenter:
Henrik Hassel
henrik.hassel@risk.lth.se

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Lund University

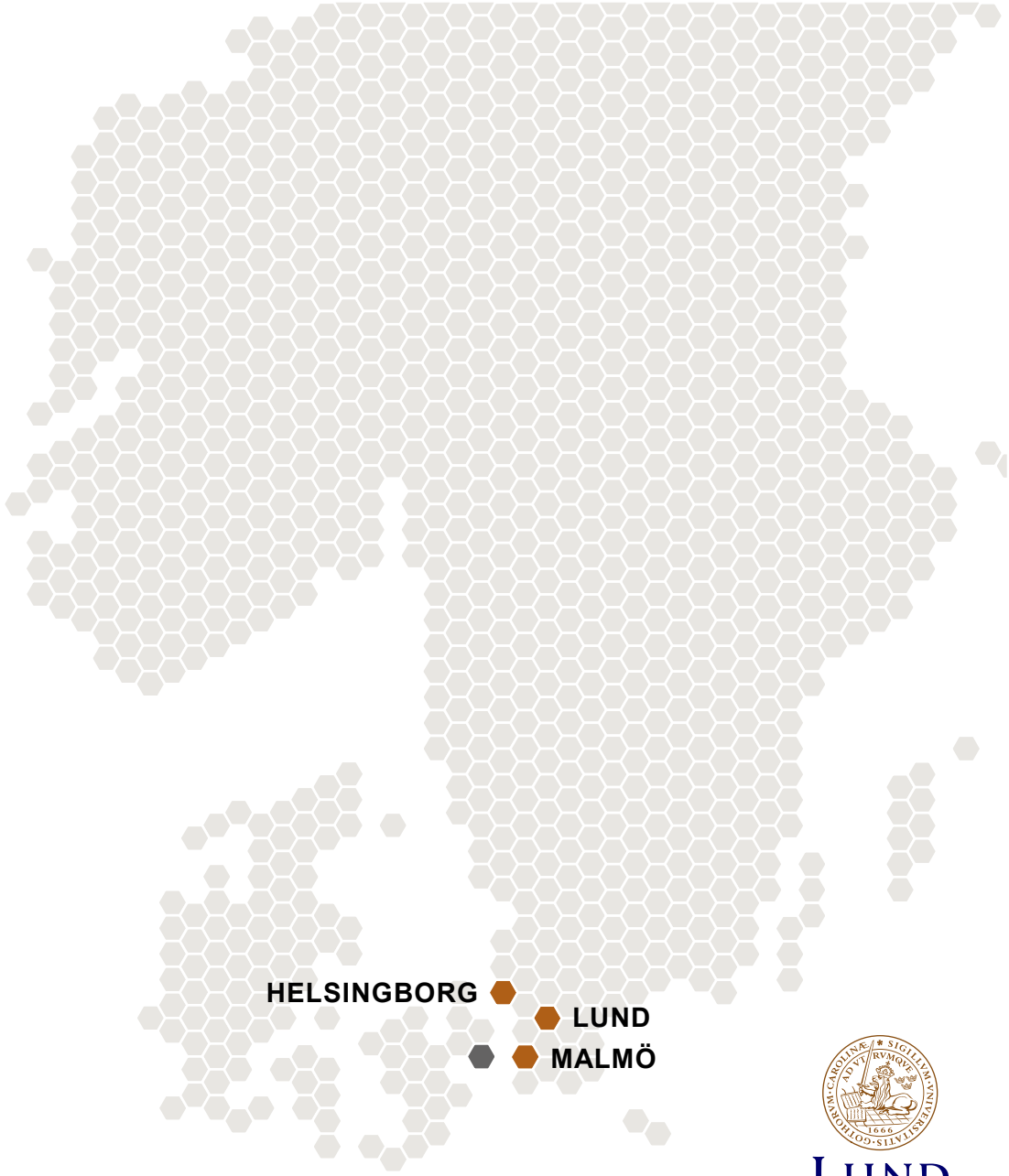
2023 | EDUCATION, RESEARCH AND COLLABORATION SINCE 1666

Nine Faculties and several world-leading research fields.

Nine faculties in three locations

- Faculty of Engineering – LTH
- Faculty of Science
- Faculty of Law
- Faculty of Social Sciences
- Faculty of Medicine
- Joint Faculties of Humanities and Theology
- School of Economics and Management
- Faculty of Fine & Performing Arts

- Campus Helsingborg
- School of Aviation

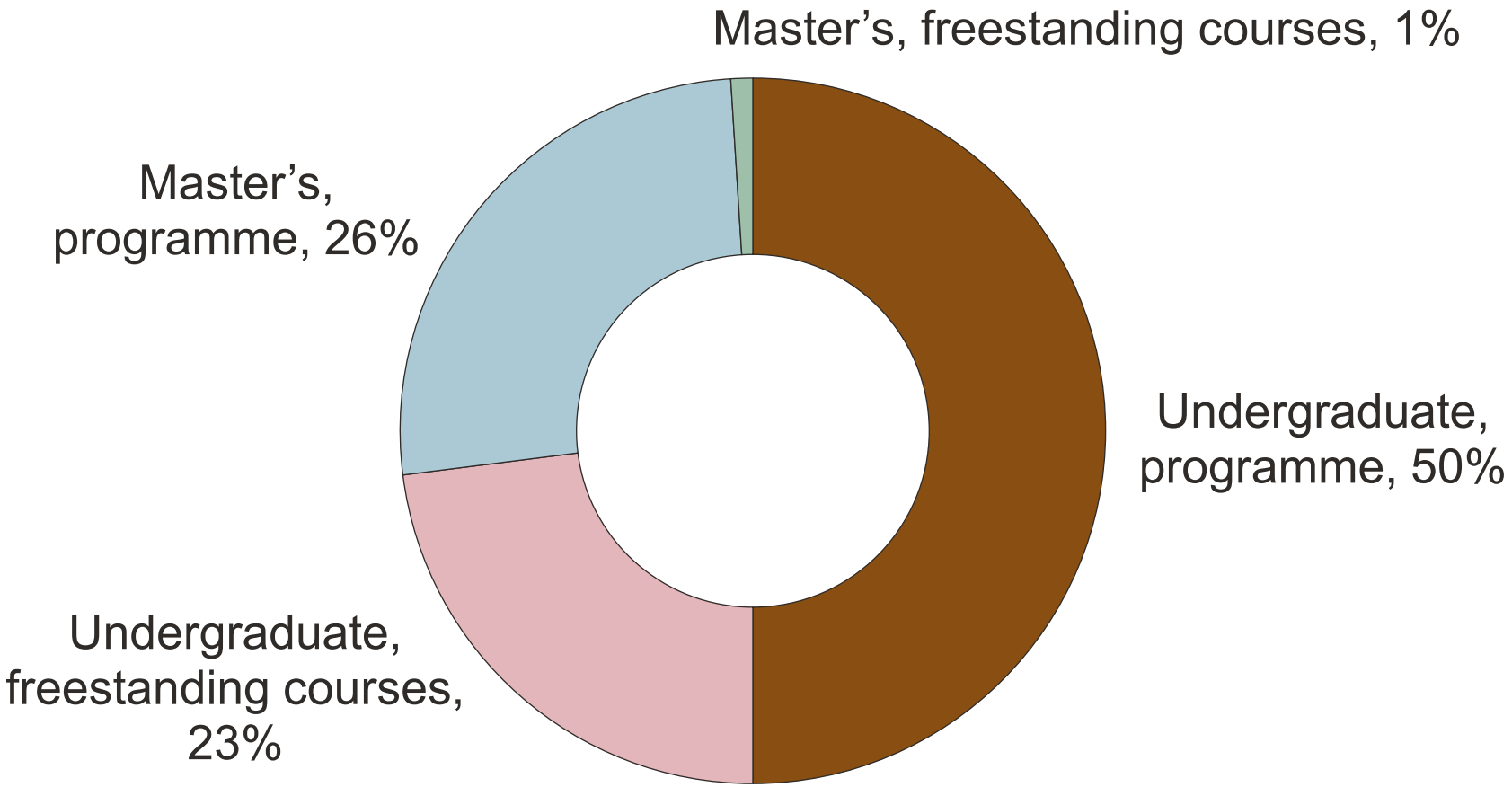


LUND UNIVERSITY

More than 8 000 employees,
about 45 000 students.

One of Scandinavia’s widest range of courses.

Distribution of students



LUND UNIVERSITY

Lund University has educated Nobel laureates, prime ministers, a president and several notable leaders.

LUND UNIVERSITY


Research that meets the
challenges of our time.

RESEARCH EXCELLENCE AREAS

Better health

Our research generates new knowledge for disease prevention, healthier living, improved diagnostics and innovative treatments.

- Proactive ageing
- Cancer
- Diabetes
- Epidemiology
- Neuroscience
- Stem cells

LUNDS UNIVERSITET

Future technology

New technologies are essential for society, for treatment of diseases and for the development of efficient, clean and secure energy.

- Light and materials
- Natural and artificial cognition
- Nanoscience
- E-science
- Information technology

LUNDS UNIVERSITET

Open societies

Through interdisciplinary collaboration, we can address global social problems, promote human rights and contribute to social sustainability.

- Human rights
- Middle Eastern studies

LUNDS UNIVERSITET

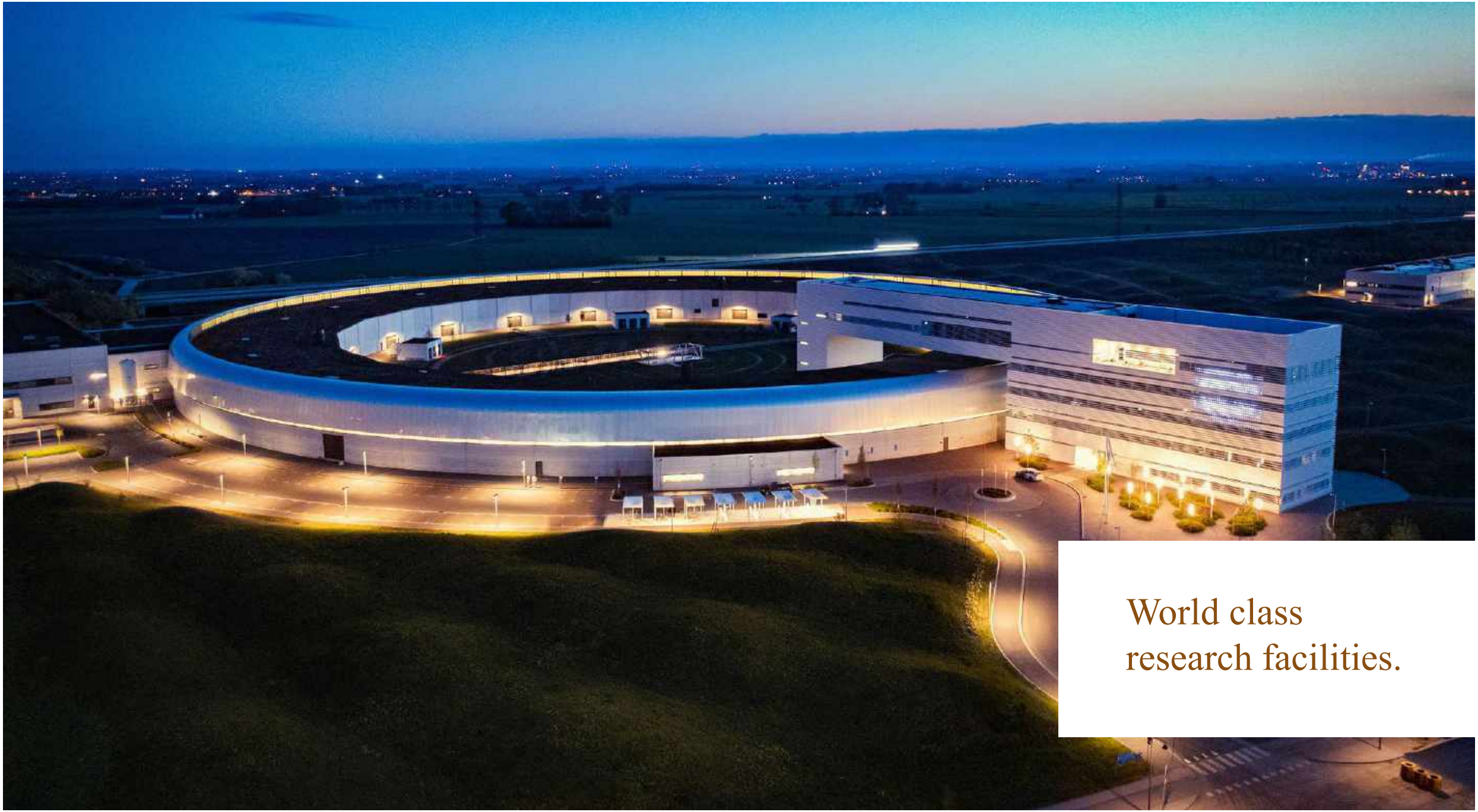
RESEARCH EXCELLENCE AREAS

Sustainable planet

Our research contributes to a better understanding of the problems around us, but also to solving current and future environmental and climate crises.

- Nature-based future solutions
- Biodiversity and ecosystems
- Sustainable production
- Climate research
- Middle Eastern studies
- Nanoscience

LUNDS UNIVERSITET


World class
research facilities.

Research figures

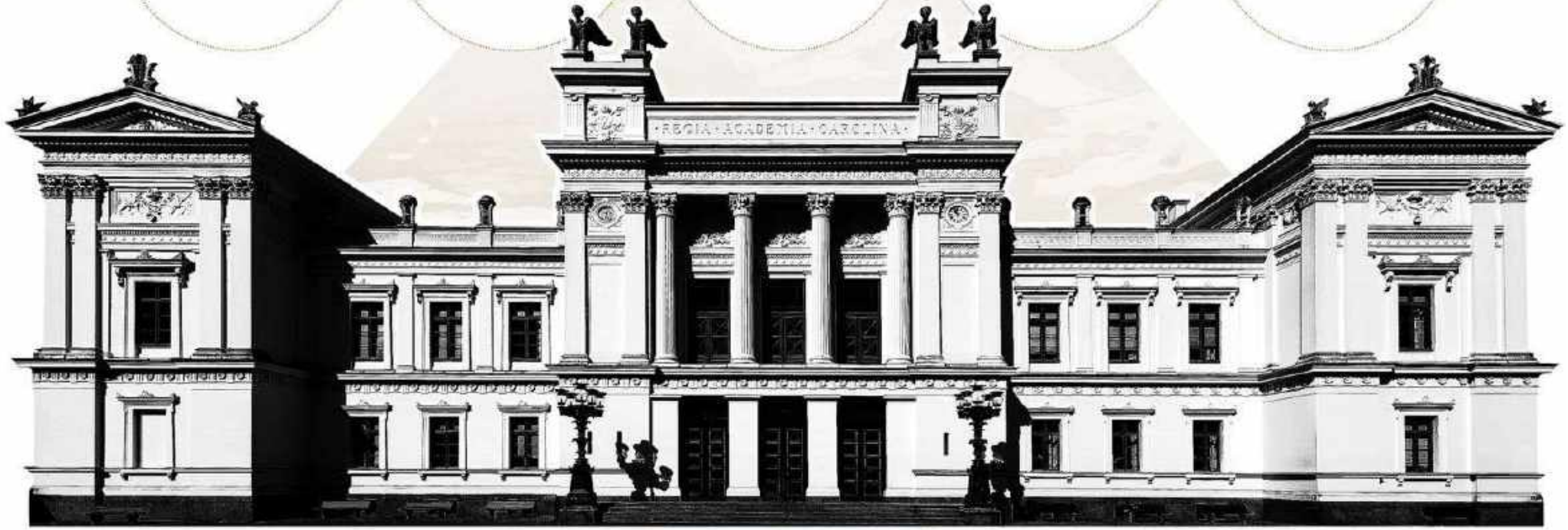
2 800
Research students

400
PhD

770
Professors

4 400
Other academic staff

6 290
Publications



LUND UNIVERSITY

World University Rankings

	QS	THE*	Shanghai**
2022	95	119	151–200
2021	87	116	151–200
2020	97	103	101–150
2019	92	96	101–150
2018	92	98	101–150

** THE = Times Higher Education*

*** Shanghai ranking = Academic Ranking of World Universities (ARWU)*

A world-class university that works to understand, explain and improve our world and the human condition.

Lund attracts more international students than any other Swedish university.

Commissioned Education (LUCE)

- An important channel for spreading knowledge and the latest research results to industry and society.
- A meeting-platform for scientists and course participants for exchange of ideas and experiences.
- Opens for commissioned projects and external collaborations.
- Through commissioned education we can contribute to the development of your company or organisation.

LUND UNIVERSITY

Living life while learning for life

Considered one of the most attractive cities for students in Sweden, Lund offers an exciting campus environment with a vibrant student life, an international atmosphere and memorable student traditions.

LUND UNIVERSITY

Lund

– the city of great ideas.

Where thousands of years of history meet the latest in modern science

- Population of nearly 128 000 inhabitants.
- Students and researchers from 130 countries.
- A truly international and vibrant atmosphere.
- Academia, business, culture and nature thrive within cycling distance.
- A picturesque city centre including the cathedral and the winding cobble-stoned streets.

LUND UNIVERSITY

Some innovations from Lund

- The artificial kidney (Gambro)
- Diagnostic ultrasound
- Nicorette – nicotine gum to quit smoking
- Axis – printer and camera servers
- Oatly – oat drink
- Proviva – probiotic fruit drink
- Orbital Systems – the world´s most water-efficient shower
- Endodrill – instrument for cancer diagnostics
- Asgard Therapeutics – gene therapy for cancer treatment

LUND UNIVERSITY

LUND
UNIVERSITY

Sustainability Forum & Excellence Programme Agenda 2030

2023

Why LU cares about sustainability

- The need and responsibility for a sustainable development

- Self-interest and legal requirements
  - The Higher Education Act
  - Research funding
  - Competitive advantage in recruiting staff and students

- A sustainability perspective must permeate all activities!

LU Sustainability Strategy

The sustainability strategy is guiding the overall work with sustainability at LU

- Lund University **integrates sustainable development in its education, research, external engagement and organisational development**, and the University's employees are well aware of their roles in this work.
- Lund University is **involved in local, regional, national and global social arenas** in order for scientific knowledge to provide leverage in society's striving for sustainability, in both the short and long term.
- Lund University is a **prominent voice in the field of sustainability** within research and teaching as well as in public debate and cultural life.
- Lund University **communicates its sustainability-related work** within the organisation and to wider society in ways that make it easy to both reach out and gain access to its activities.

Sustainability Forum

Sustainability Forum is Lund University's joint **umbrella organization for strategic support** and coordination of sustainability issues in education, research, collaboration, communication and student participation.

Sustainability Forum has a **steering group** with representatives from all faculties, students and external members, as well as an office.

History Sustainability Forum

- Bottom-up initiative with more and more responsibility
  - From climate focus to sustainability
  - From 3-year assignments to permanent position in 2021
  - Funding and mission from Vice-Chancellor
  - Placed at Faculty of Science

Mission of Sustainability Forum

- A **strategic support function** to the core activities and all parts of Lund University.
- Stimulate the development of **challenge-driven research on sustainability.**
- Stimulate the integration of **sustainability aspects into education** at all levels.
- Together with the greater society, promote **mutual learning** and **development-driving innovation** for sustainable development.
- Coordinating sustainability-related **communication**.
- Support for sustainability-related **student initiatives**, networks and activities.
- **Reference group** for the Environmental manager.

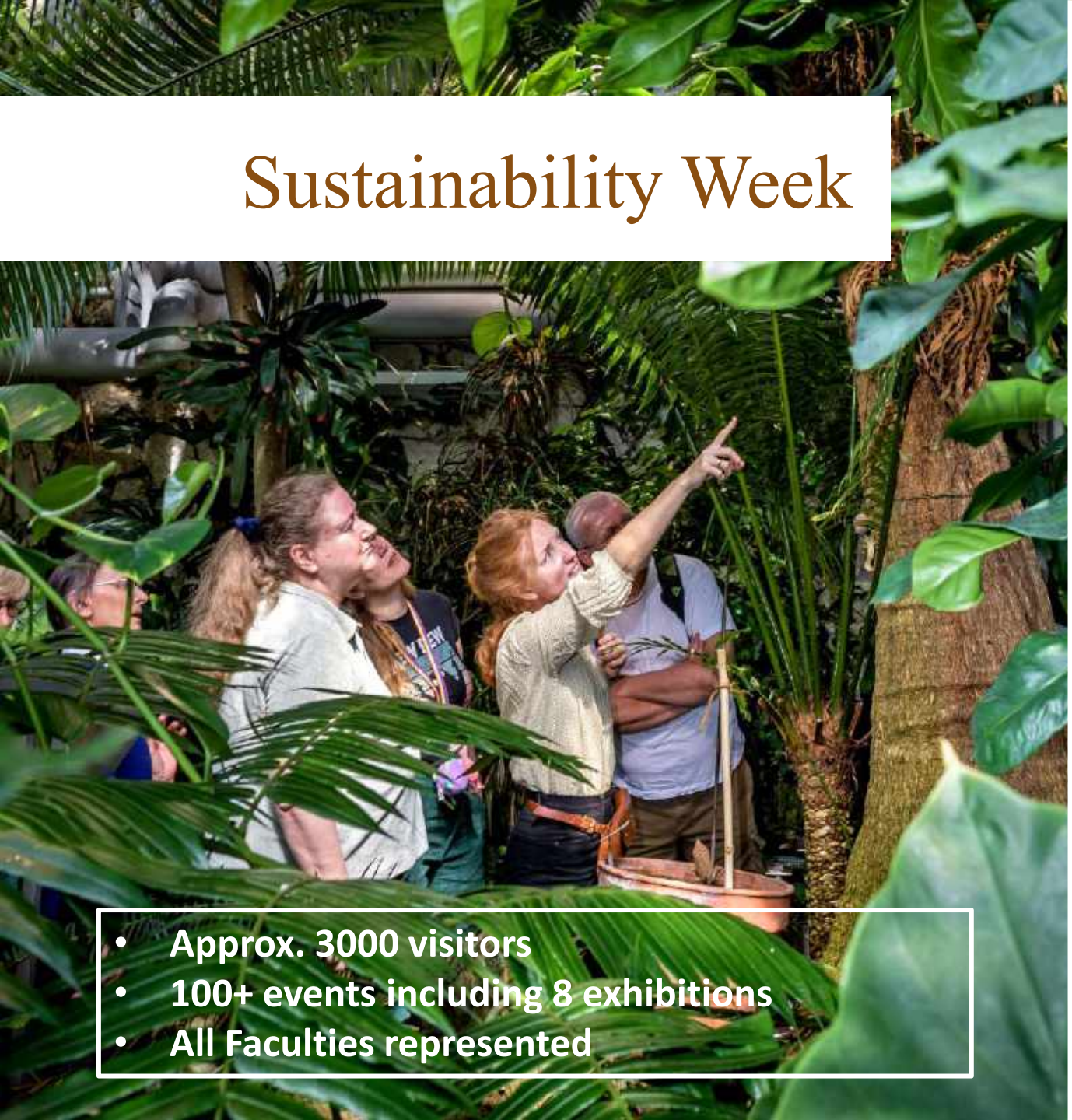
Collaboration and outreach for sustainable development

The university's goal is to be prominent in local, regional, national and global social arenas so that scientific knowledge leverages society's pursuit of sustainability. Dialogue with a wide range of societal actors makes new knowledge available, collaborates on solutions and identifies new research and educational needs.

Sustainability Week

Sustainability Week is an annual event in Lund where the university, Lund municipality and other interested parties fill **a week with activities around sustainability**. It is a week of discussion and action, serious issues and hopeful visions for the future.

Sustainability Week



- Approx. 3000 visitors
- 100+ events including 8 exhibitions
- All Faculties represented

Topics, e.g.: fake news, social resilience, pollution in space, activism, pollination, degrowth, support for parents, children's meeting place, fashion…

Lund University Conference on Knowledge for Sustainable Development

The conference Knowledge for Sustainable Development is open to all researchers at Lund University. The aim of the conference is for researchers to share their findings, increase their knowledge about sustainable development, and connect with other researchers accross research fields. It is an interdisciplinary meeting place.

Outreach and communication

- Newsletter
- Networking
- Media monitoring
- Research communication
- Social media
- Editorial office outreach Lund University internal sustainability work
- Blog: Sustainable Travel Stories

Sustainability Forum's role in education

Support the quality assurance and quality development of the education at Lund University, where one of the eleven criteria is:

That subject relevant perspectives in sustainable development are promoted in the education.

Education for Sustainable Development

All students acquire knowledge and understanding of sustainable development and how their programmes relate to this, and thereby contribute expertise in their future roles in society.

There is continuing professional development within sustainable development for all employees at Lund University.

The university supports student initiatives in sustainable development and there are opportunities for students to participate in work to achieve the goals of the strategy.

Sustainability Forum's support function

Since December 2021, the LU Sustainability Forum has its own education coordinator who provides strategic support for education for sustainability, cooperates with external partners, arranges events and supports networking activities across Lund University.

Operationalising sustainability as a concept

- Mapping sustainability in education – where are we today?
- Trade-off between making measurable and meaningful?
- Mapping sustainability in research
  - Sustainability tag
  - Challenges
- Tagging study programmes?
- Our approach to mapping sustainability in education

Education for Sustainable Development

Definition UNESCO:

”Education for Sustainable Development (ESD) empowers learners with knowledge, skills, values and attitudes to take informed decisions and make responsible actions for environmental integrity, economic viability and a just society.

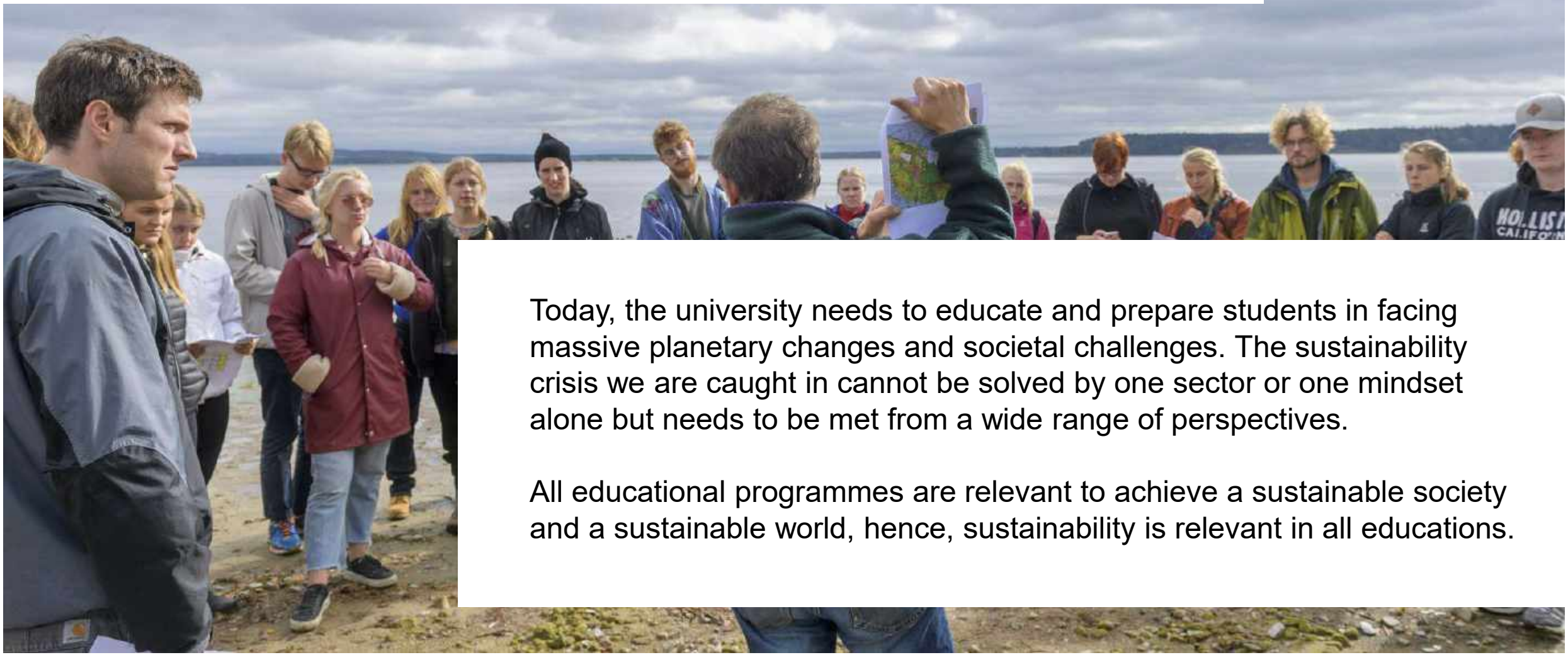
Education for Sustainable Development is a lifelong learning process and an integral part of quality education. It enhances the cognitive, social and emotional and behavioral dimensions of learning. It is holistic and transformational, and encompasses learning content and outcomes, pedagogy and the learning environment itself.”

Key competences

"A functionally linked complex of knowledge, skills, and attitudes that enable successful task performance and problem solving […] with respect to real-world sustainability problems, challenges, and opportunities" (Wiek et al. 2011)

E.g. systems-thinking, futures-thinking, strategies-thinking, collaboration…

Why do we need education for sustainability?



Today, the university needs to educate and prepare students in facing massive planetary changes and societal challenges. The sustainability crisis we are caught in cannot be solved by one sector or one mindset alone but needs to be met from a wide range of perspectives.

All educational programmes are relevant to achieve a sustainable society and a sustainable world, hence, sustainability is relevant in all educations.

A Didactic Model of Sustainability Commitment

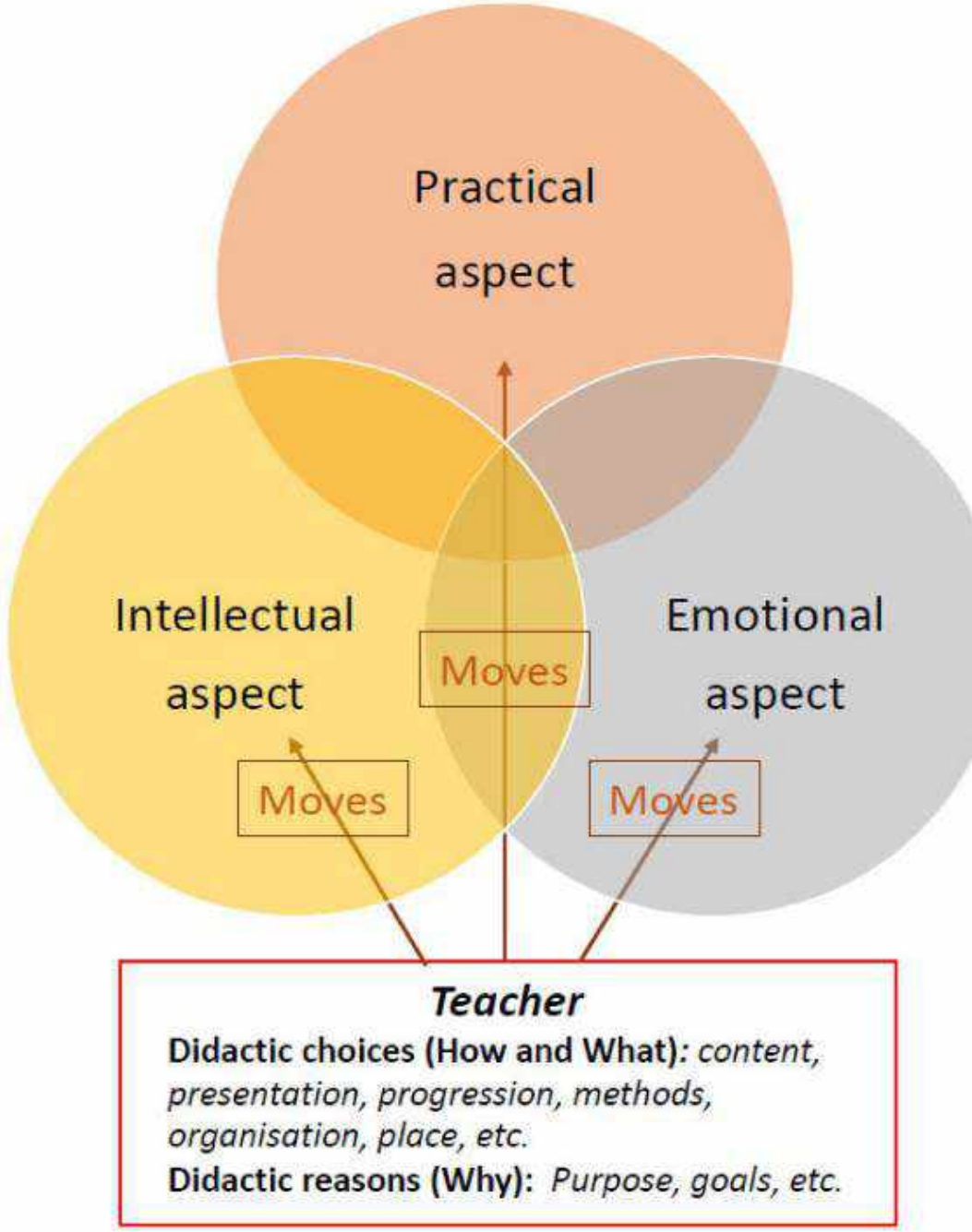


Figure 2. Teachers' moves in relation to students' sustainability commitment.

Öhman, J.; Sund, L. A Didactic Model of Sustainability Commitment. Sustainability 2021, 13, 3083.

Teaching sustainability

- Challenges:
  - Lack of time
  - Lack of knowledge about sustainability
  - How to assess?
- How to approach?
  - Not everyone needs to know everything!
  - Course relevant perspectives
  - Ask students to share and educate
  - Introduce more practical elements
  - Invite colleagues from other faculties

  →University needs to provide support!

Resources for teaching staff

Task Force on Education for Sustainability - a grassroots initiative at Lund University, with the aim to curate and create resources to support educators to teach about sustainability. The Task Force consists of people from across Lund University that work directly with education for sustainability (EfS), either as pedagogical developers, administrators, educators, or other decision makers.

Community of Practice – a grassroots network for those with professional or personal interest in education for sustainability. Meeting place and exchange of ideas.

Courses for teachers

- LU offers a variety of courses and other resources for teaching staff
- Varying formats to fit different time availabilities and purposes
  - Online and on site
  - Focus on sustainability concepts vs. Pedagogy
  - Stand alone seminars to extensive courses
- Important for career development at the university
- Planned for the next semester:
  - Key competences and learning objectives
  - Use of games
  - Climate anxiety

Agenda 2030 Graduate School

YLVA VAN MEENINGEN, RESEARCH ADMINISTRATOR

Background

- Lund University's Priority areas 2017-2026 (one of six areas):
  - *Stimulating active collaboration to solve societal challenges* - work for a sustainable development through e.g. boundary-crossing and interdisciplinary collaborations is encouraged

Background

- Vice-chancellor decision: to invest agency capital from all faculties in a graduate school focusing on societal challenges and Agenda 2030.
- In 2021, Lund University decides to invest in research programme for excellence, focusing on Agenda 2030 and sustainable development.

Excellence programme for sustainable development

In 2021, Lund University allocated **SEK 100 million** to a research program for excellence with a focus on **Agenda 2030 and sustainable development**. The purpose of the program is to create internationally leading environments that can attract funding from future investments in sustainable development. The investment involves both new postdoctoral positions in interdisciplinary projects and new doctoral students for the graduate school Agenda 2030.

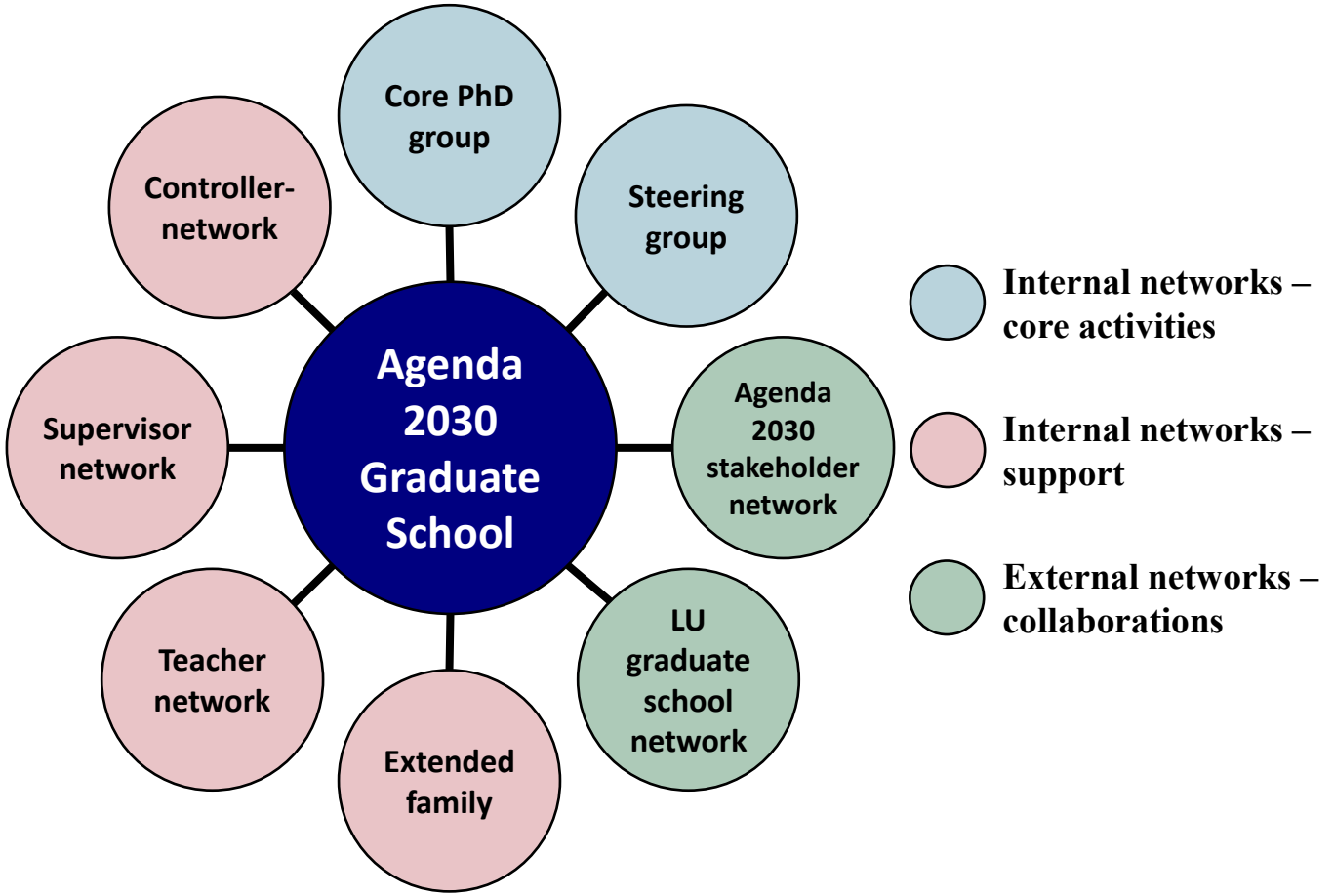
Organisational structure

Agenda 2030 Graduate School's office

Kristina Jönsson
Coordinator

Ylva van Meeningen
Research-administrator

Sara Håkansson
Communications officer



GRADUATE SCHOOL ACTIVITIES

Interdisciplinary PhD courses
Doctoral student positions
Other activities

PhD courses

Interdisciplinary courses

- Financial support 8 courses/year, 1 course/faculty
- Thematic, interdisciplinary, holistic, cross-faculty collaboration

Course examples within the Agenda 2030 Graduate school			
Name of course	**Responsible faculty**	**Involved faculties/centres**	**Occurrence**
Sustainable cities and communities **Water and sustainable development**	Engineering	Humanities and Theology, Medicine, School of Economics & Management, Sciences	Every 2nd year, interchanging
Representing sustainability	Fine & Performing Arts	Humanities and theology	Every 2nd year
Existential sustainability: expanding the discourse on sustainability	Humanities and theology	Engineering	Once
A law to save the world?	Law	Humanities and Theology, Social Sciences	Every year
Health and the environment with a focus on climate change and sustainability	Medicine	Engineering, Sciences, Social Sciences	Every 2nd year
Digital monies for a sustainable future	School of Economics & Management	Engineering	Every 2nd year, interchanging
Transformations towards sustainability: Responsible consumption and production		Engineering, Social Sciences	
Sustainable land use	Science	Engineering, Social Sciences	Every 2nd year
Justice, equality and the 2030 Agenda	Social Sciences	Engineering, Humanities and Theology, School of Economics & Management	Every 2nd year

PhD student recruitment

Juan, Linn, Phil & Jakob
(School of Economics & Management)

Jesica & Ida
(Faculty of Science)

Alexander, Emelie, Billy & Markus (Faculties of Humanities and Theology)

Alva, Maria, Angelica, Georgios, Juan Bello & Juanita (Faculty of Engineering)

Christie, Naja, Carlo & Juan (Faculty of Social Sciences)

Anna, Tanya, Ilili & Linn (Faculty of Medicine)

Alezini, Soo-hyun & Mahesh (Faculty of Law)

Lina, Steinunn & Iury (Faculty of Fine & Performing Arts)

Decentralised off-grid electrification solutions, with a focus on sub-Saharan Africa

How to manage drinking water in a sustainable way accounting for the needs of the present and the future

How well do development agencies understand and integrate pastoral cultures into their development agendas

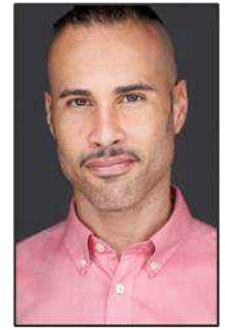
Climate and environmental impact from single-use and reusable equipment in intensive and perioperative care

How emotions such as compassion and empathy affect judgement and decision making

Possible connections between the students' learning in music lessons and their societal engagement

Presence, origin and impact of impurities in iron-based alloys, to enhance the recyclability of these materials

How climate change impacts local communities and its implications for peace



Ways of using performance art as a regenerative and socio-political tool to understand the lives of immigrants

Perspectives of health, climate and inequalities in health, based on data from epidemiological studies

How the role of law can be used as an instrument of social resilience for communities that have faced serious environmental disasters

How international soft law interplays with European protection standards in the field of migration

Other activities

Examples of activities open for PhD students in Lund or to the public

What are the challenges?

- To break through structural boundaries
- To encourage experimentation
- To minimize misunderstandings
- To create interesting content for all PhD students at Lund University

What are the opportunities?

- Funding for interdisciplinary PhD courses
- Cross-faculty collaborations
- Possibilities to try something new
  - Seminars, courses and other activities
  - Recruitment, routines and management
- Long-term: more collaborations and breaking down boundaries

Keep in touch!

Agenda 2030 graduate school:

Web: sustainability.lu.se/agenda-2030-graduate-school

Twitter: @Agenda2030_LU

LinkedIn: linkedin.com/company/lund-university-agenda-2030-graduate-school

Facebook: facebook.com/Agenda2030LU

Blog: https://agenda2030.blogg.lu.se/

Sustainability Forum:

Web: https://www.sustainability.lu.se/

Newsletter: https://www.sustainability.lu.se/about-sustainbility-forum/newsletter

Jenny: jenny.hansson@cec.lu.se

Terese: terese.thoni@cec.lu.se

Thank you!

ylva.van_meeningen@cec.lu.se

sustainability.lu.se/agenda-2030-graduate-school

LUNDS
UNIVERSITET

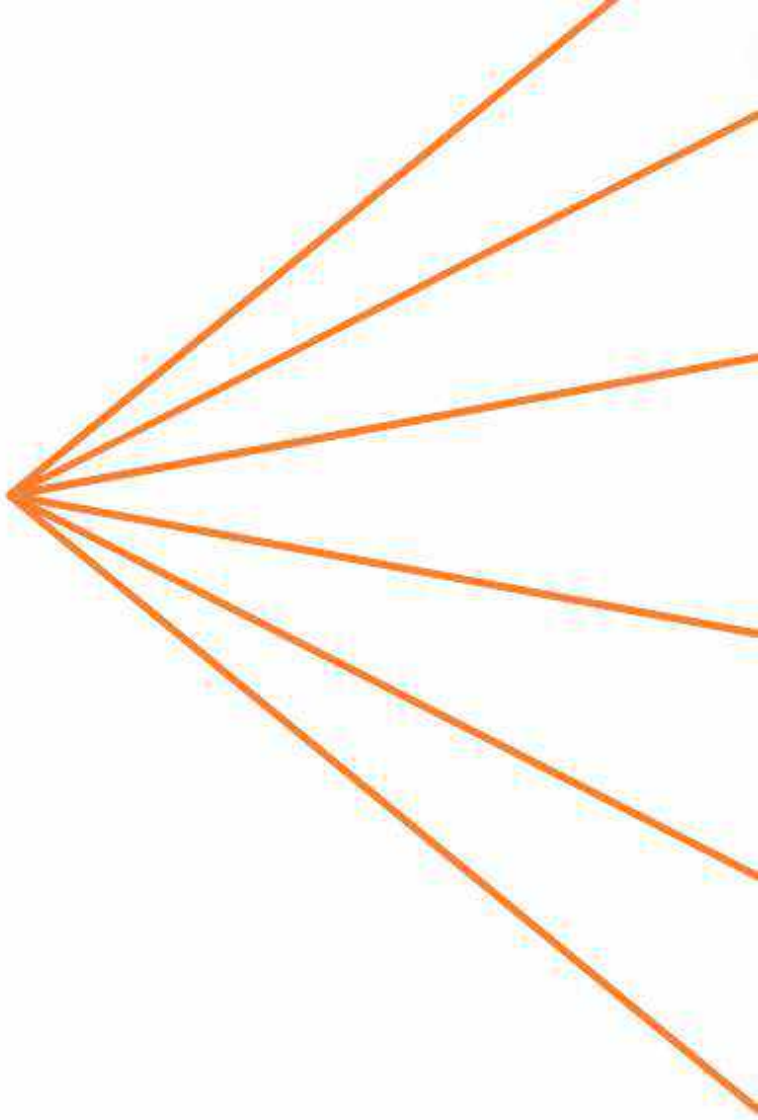
H+FOREST

THE CAMPUS OF THE FUTURE

Perspectives for sustainable development based on students' needs and behaviours

AGENDA

- Purpose and Goal
- Project Partners
- Interdisciplinary Work
- Research Process
- Preliminary Insights
- Upcoming



PURPOSE AND GOAL

WHAT COULD THE CAMPUS OF THE FUTURE LOOK LIKE?

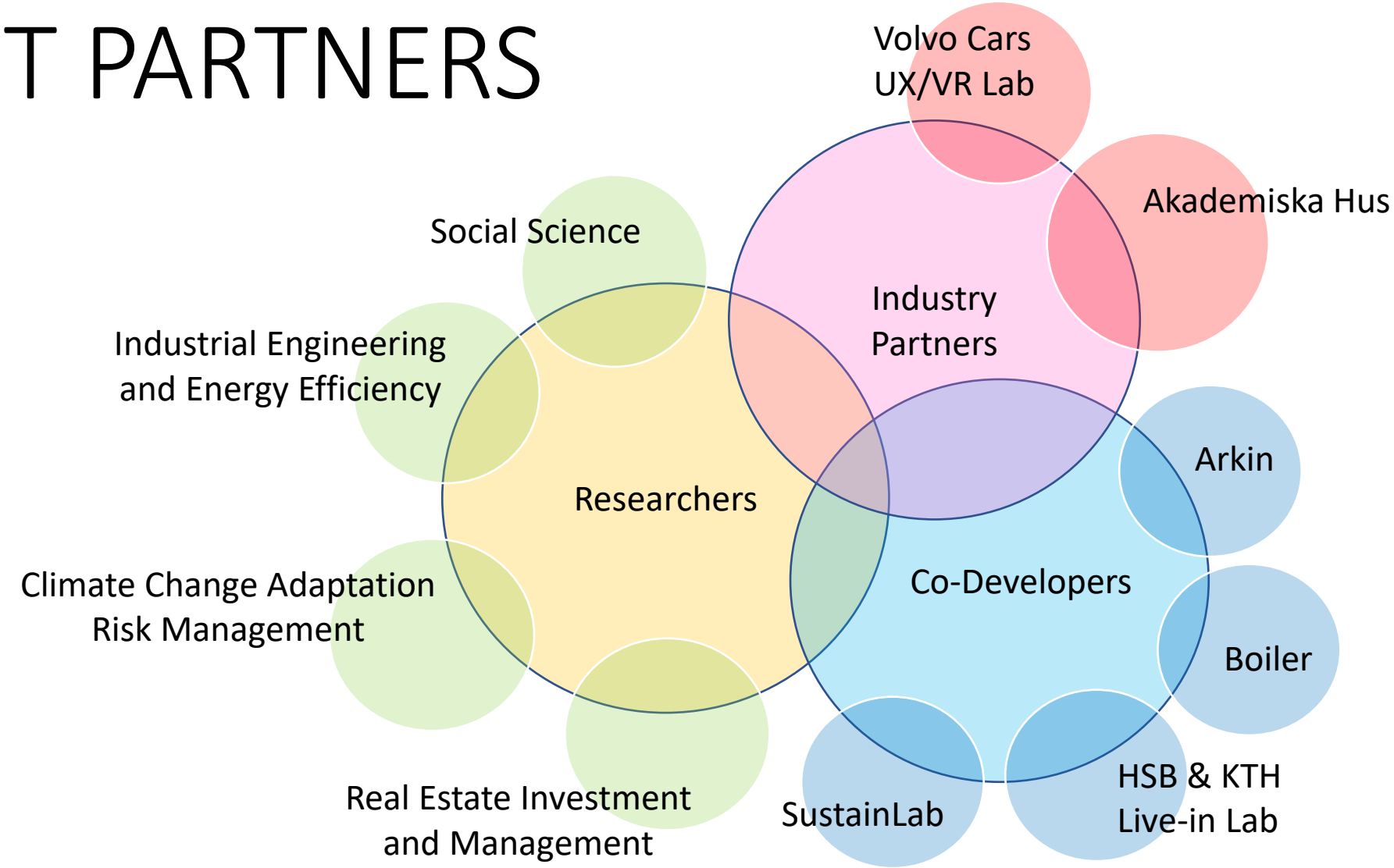
ENVIRONMENTS

- Facilitate sustainable habits and establish learning in everyday life
- Co-innovate ideas and model them in VR
- Test and evaluate to prepare their implementation

BEHAVIORS

- Co-create knowledge about students needs, behaviors and their interaction with built environments
- Co-develop sustainable behaviors goals (SBG)
- Classify different types of behavior and illustrate their climate impact

PROJECT PARTNERS



BENEFITS AND CHALLENGES

OF INTERDISCIPLINARY WORK WITH MULTIPLE DIFFERENT PARTNERS

- Mix of perspectives for a bigger picture
- Abundance of skills and competences
- Shared leadership and individual autonomy
- Work freely and creatively in your area of expertise
- Chance to tackle big open questions and complex issues
- Have impact and make a change!

- Different professional languages
- Different approaches and ideas
- Confusion about roles and responsibilities
- Manage project scope and meet deliverables
- Remote workmode with short meetings
- Coordinate division of work

RESEARCH PROCESS

- Literature review
- Participatory observations and key-informant interviews
- Series of workshops and tracking periods
- Live-in Lab Data
- Analysis: qualitative, quantitative, spatial
- Writing and publishing articles
- Translating insight into implementation

RESULTS – Participatory Observations

Norms

Awareness and respect for personal space

Acquire space and behave in different spaces - social cues

Sovereignty

Ownership over a space

Spatial language communicates sovereignty level

Determines use of flexibility

Stress

Different causes and effects

Affects all other areas of sustainability

RESULTS – Observations and Interviews

Ideal Learning Environment

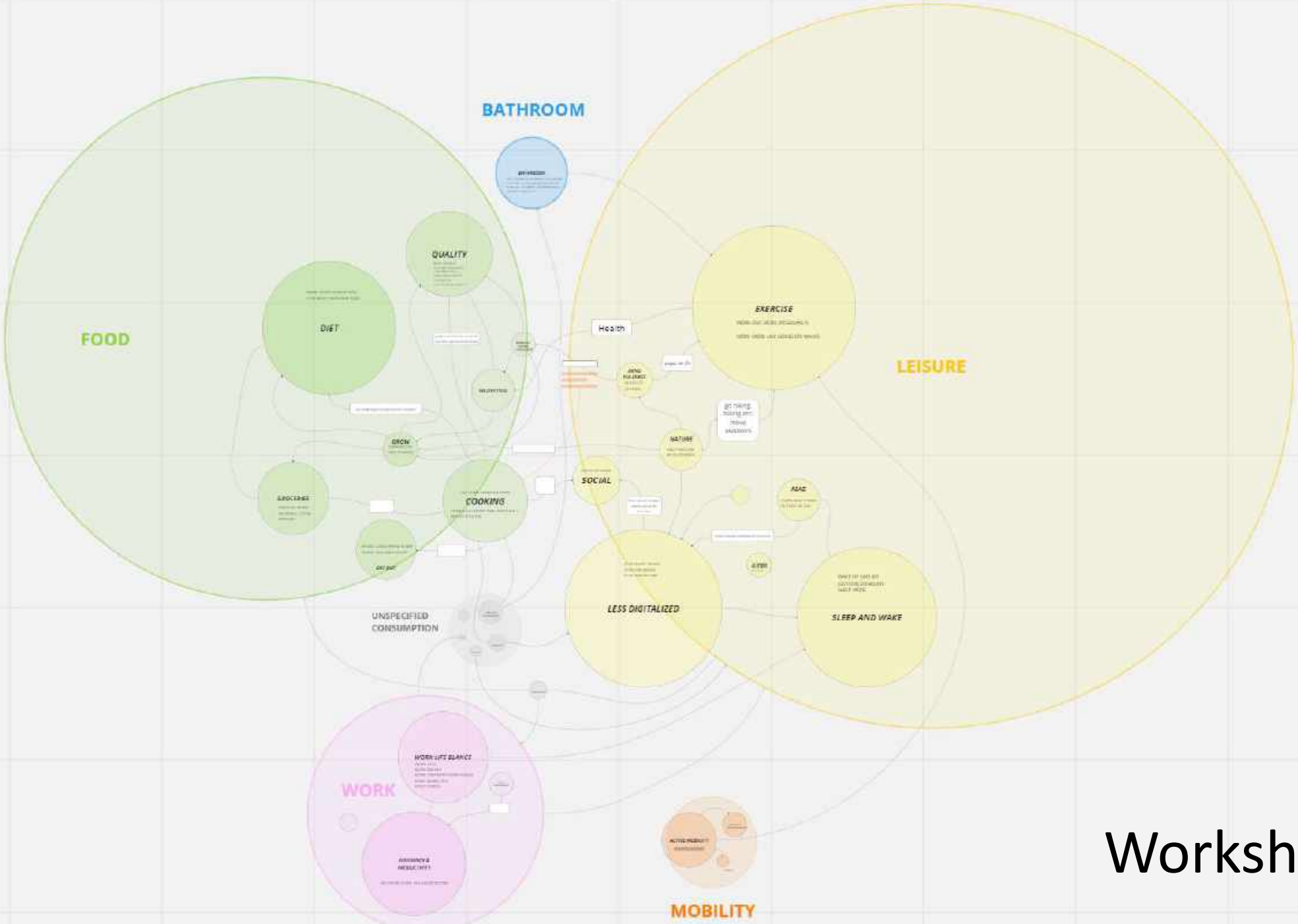
- Different spaces for different modes of study
- Mix of methods and tools
- Closeness of fellow students and university resources
- Airy and spacious but secure and secluded
- Flexibility in spaces with sovereignty

Dream Campus

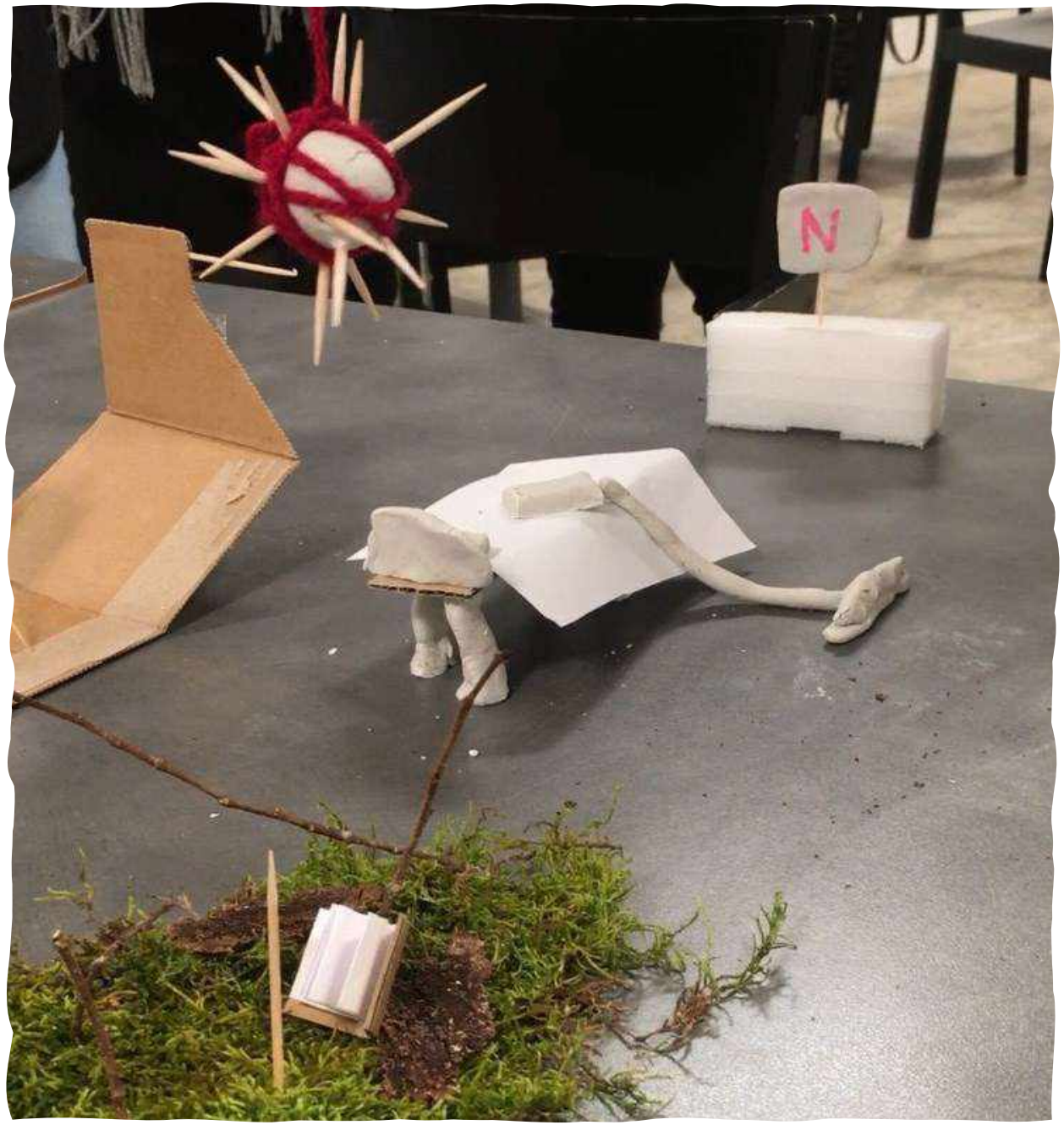
- More spaces with seclusion and sovereignty
- Relaxation/Leisure areas
- More and better food options
- More green and natural areas, urban gardening
- Good connectivity and maps

RESULTS – Workshops

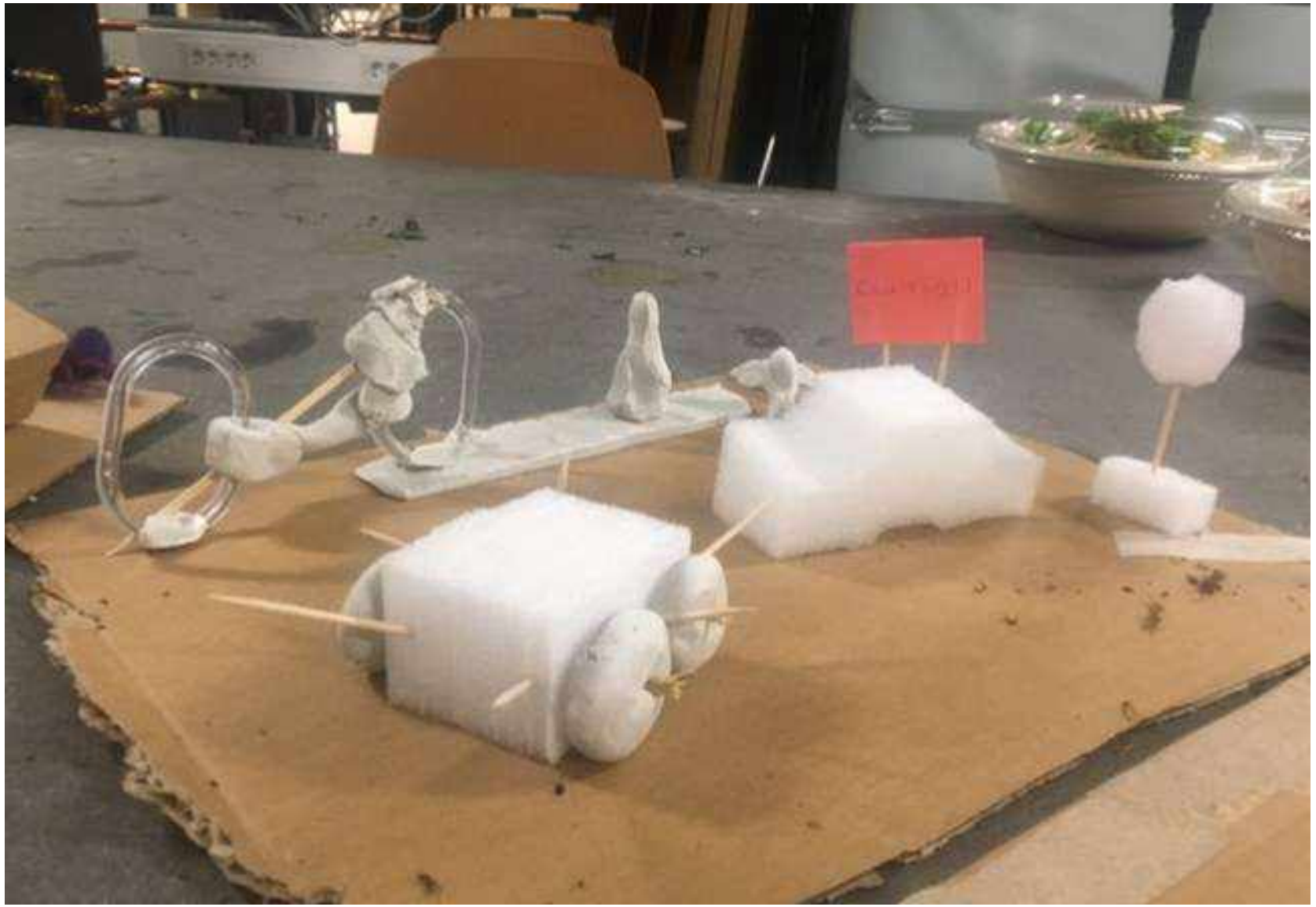
- **Workshop 1**
  - Map and reflect daily behavior
  - Sustainable behavior goal
- **Workshop 2**
  - Reflect on goals, barriers and enablers
  - Build models – visualize problem and solution
- **Workshop 3**
  - Build upon an existing concept of space


BATHROOM
FOOD
QUALITY
DIET
Health
EXERCISE
LEISURE
GROW
NATURE
SOCIAL
COOKING
UNSPECIFIED
CONSUMPTION
LESS DIGITALIZED
SLEEP AND WAKE
WORK
MOBILITY

Workshop 1



Workshop 2

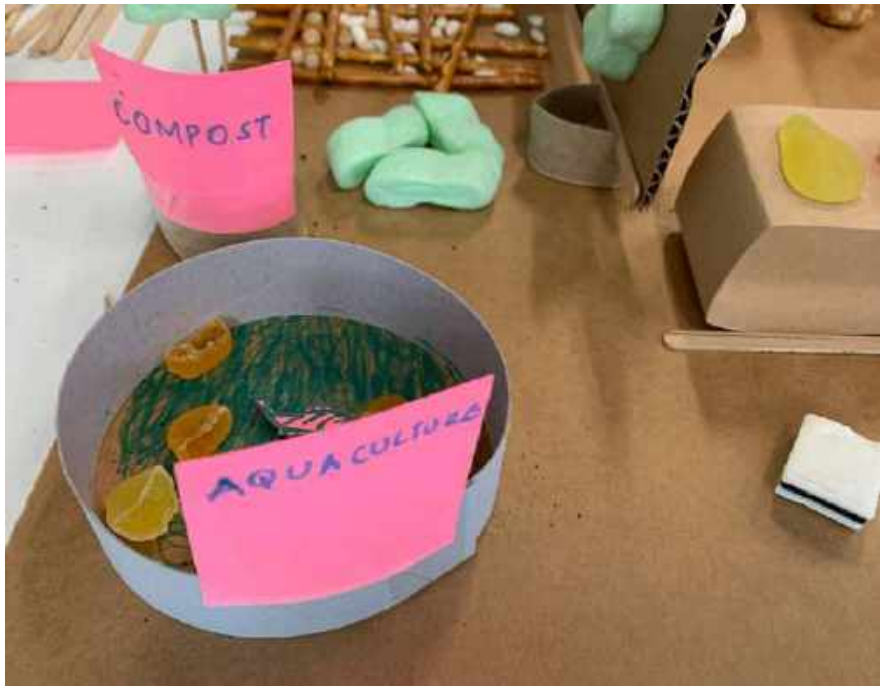


Workshop 2

THE RETREAT

Workshop 3

THE KITCHEN



Workshop 3

THE GYM

Workshop 3

UPCOMING

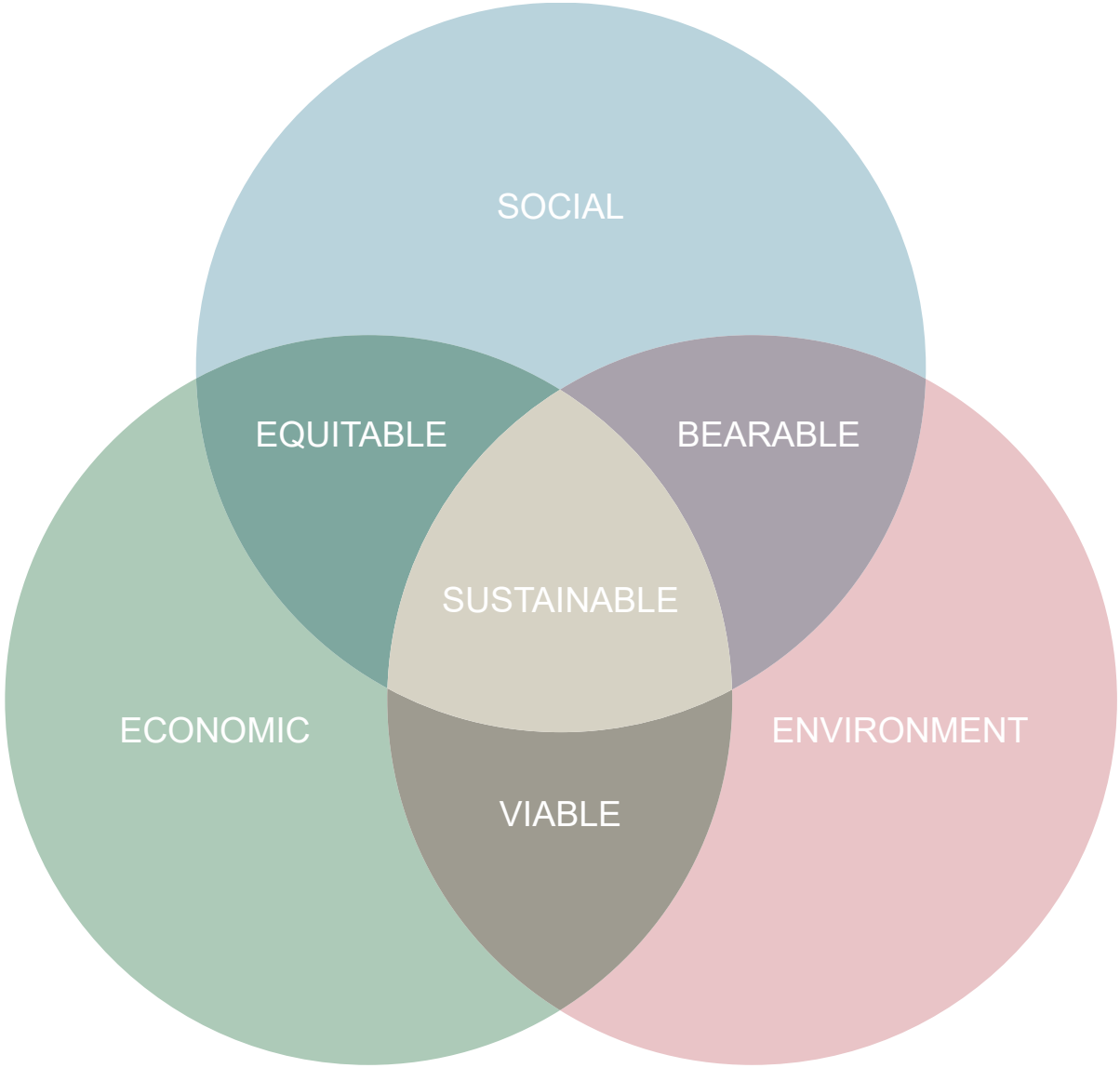
- Visualize behavioral patterns and calculate their environmental impact
- Evaluate students’ visions from an environmental perspective
- Assess potential for implementation
- Identify suitable changes to the existing environment

LUNDS UNIVERSITET

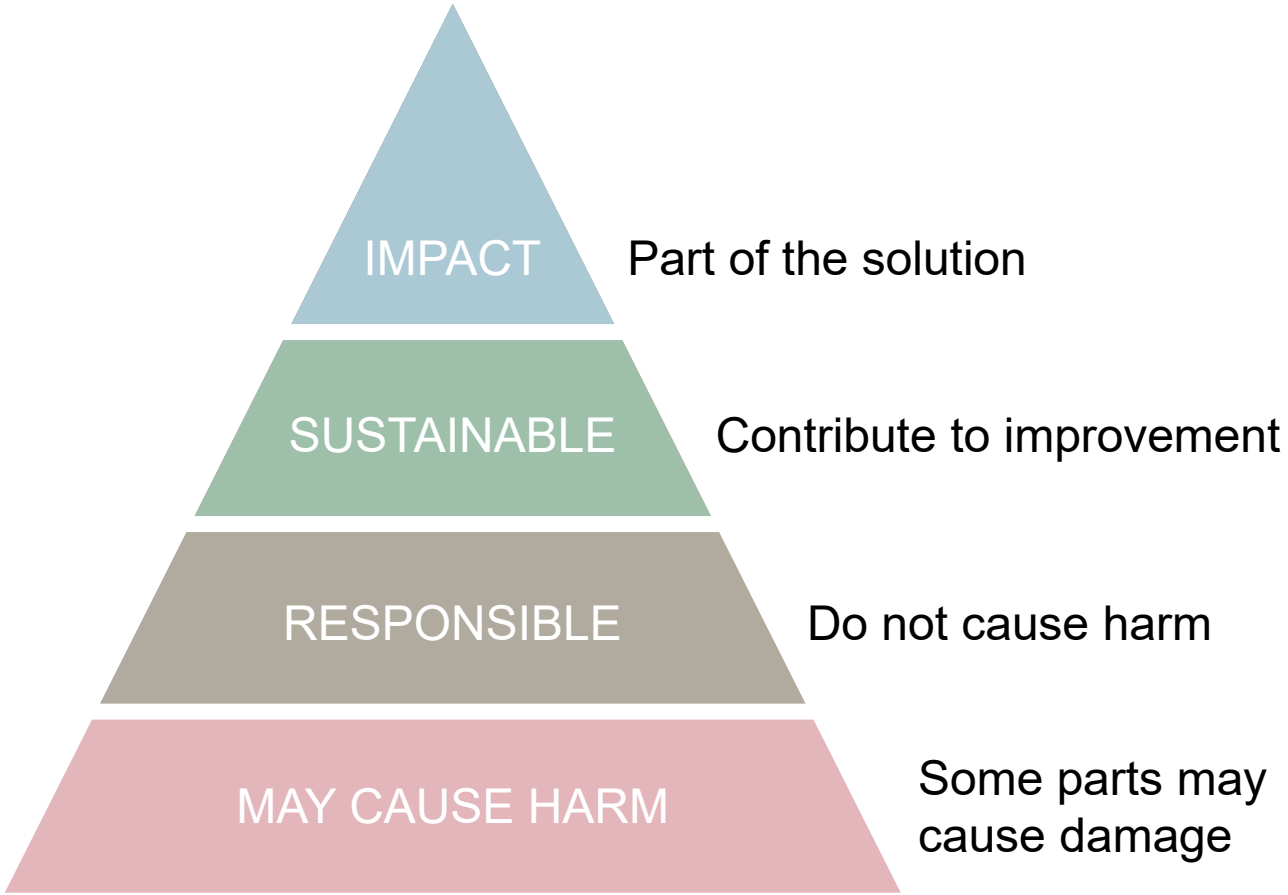
Strategic sustainability

A COACHING MODEL FOR BUSINESSES, RESEARCHERS, AND STUDENTS

We work to create sustainable solutions for the future. All three aspects are important to develop sustainable and lasting businesses.



Projects operate on different levels of sustainability. We work to ensure that all projects and future businesses meet at least the minimum standards of sustainability.



Source: Impact Management Project, www.impactmanagementproject.com

Main differences between projects at different levels of sustainability

MAY CAUSE HARM	RESPONSIBLE	SUSTAINABLE	IMPACT
MAY CAUSE HARM	**ACTS TO AVOID HARM**	**POSITIVE EVOLUTION**	**SOLVES PROBLEM**
Significant parts of the project's economic activity may cause avoidable or unavoidable harm. The business makes no specific effort to minimise or avoid doing harm.	The project acts to minimise harm from its economic activity by adhering to laws, regulations, ethical standards and other industry standards, but does not take steps towards positive evolution.	Projects take steps towards positive evolution on sustainability goals mainly affected by their economic activity.	The purpose of the project's economic activity is to create positive, measurable net effects on a well-defined problem for individuals, society and/or the planet.

So, what is impact?

An impact business:

- has measurable, positive, and significant net effects
- tackles priority issues for society and ignored target groups and/or the planet
- has an impact by design
- demonstrates additionality, unlike existing solutions and systems
- demonstrates significant scale, depth, and duration

Step 1: Assess the team’s sustainability potential

It is time to look at the team’s sustainability potential. What drives them? How fast is the project's intended industry moving towards sustainability goals and will there be any imbalance in the project's operations between profitability and sustainability?

Fill in together with the team.

Step 1: Assess the team’s sustainability potential

What drives the founding team?

How fast is the project's intended industry moving towards sustainability goals?

Will there be any imbalance in the project's operations between profitability and sustainability?

Step 2a: Sustainability matrix

Identify key elements of the project's planned operations which will contribute significantly to its financial and value-based goals.

Look at its intentions (its ultimate goal, its anticipated revenue streams).

Look at operations and other factors (purchasing, materials, logistics, waste, energy use, water, packaging, transport, diversity, inclusion, etc.)

Focus first on the positive - what positive effects could the project have?

Step 2a: Sustainability matrix – Positive effects

	Effects	May cause harm	Responsible	Sustainable	Impact
	Example:				
+	Increase electricity-based transportation				Reduces fossil fuel use by x%
+	Reduces the need for heavier batteries				Reduces by x% compared to electric vehicles
+	Improved air quality			Lower particulate emissions from fossil fuels	

Step 2a: Sustainability matrix

Negative effects

Identify the negative effects arising from the project's main goals.

Look at its operations or other factors (purchasing, materials, logistics, waste, energy use, water, packaging, transport, diversity, gender equality, etc.)

What negative effects could the project have?

Step 2a: Sustainability matrix – Negative effects

	Effects	May cause harm	Responsible	Sustainable	Impact
	Example:				
–	Batteries are needed for operation		Follows laws and regulations on production and procurement		
–	Material for the product – aluminium		Follows laws and regulations on procurement		

Step 2b: Identify improvement and development potential

Once the positive and negative effects are identified, ensure the positive effects in the model outweigh the possible negative effects on society and/or the environment.

Step 2b: Identify improvements and development potential

	Effects	May cause harm	Responsible	Sustainable	Impact
+	Increases electricity-based transportation				Reduces fossil fuel use by x%
+	Reduces the need for heavier batteries				Reduces by x% compared to electric vehicles
+	Improved air quality			Lowers particulate emissions from fossil fuels	
–	Batteries are needed for operation	✓	Follows laws and regulations on production and procurement →	Increases scrutiny of production for procurement of batteries produced under environmentally and socially acceptable conditions	
–	Material for the product – aluminium	✓	Follows laws and regulations on procurement →	Increases use of recycled aluminium	

Example – Effects at different levels of sustainability

Effects	May cause harm	Responsible	Sustainable	Impact
Material	Uses environmentally hazardous materials	Follows rules and laws on which materials to use and how they are produced	Uses materials with minimal environmental impact which incorporate social considerations	The business aims to measurably reduce the environmental impact by resuse of materials – quantify
Energy	Uses fossil fuels	Follows rules and laws on energy use/production	Uses mostly renewable energy	The business has a solution that greatly reduces energy needs/enables shift away from fossil fuels – quantify
Waste	Generates hazardous waste	Follows waste management rules and laws	Ensures that waste is recycled in an environmentally sustainable manner	The business's product/service creates measurably reduced waste/handles waste – quantify
Transportation	CO2 intensive transport	Follows rules and laws on transportation	Fossil-free transportation	Offers a transport solution that measurably reduces fossil fuel emissions in a specific sector – quantify
Equality	Contributes to increased discrimination and inequality	Follows laws and guidelines	Works actively to reduce discrimination and increase equality	The business demonstrably reduces discrimination and increases gender equality – quantify
Equal access to sustainable energy	Contributes to negative effects	Follows laws and guidelines	Can be used in countries which are less ahead in using new technical solutions	The business has a solution that greatly increases access to sustainable energy in countries where access is currently limited – quantify

Step 3: Link effects to the sustainable development goals (Tip! Read up on the targets)

	Effects	May cause harm	Responsible	Sustainable	Impact
+	Increase electricity based transportation				Reduces fossil fuel use by x%
+	Reduces the need for heavier batteries				Reduces by x% compared to electric vehicles
+	Improved air quality			Lower particulate emissions from fossil fuels	
–	Batteries are needed for operation		Follows laws and regulations on production and procurement	Increases scrutiny of production for procurement of batteries produced under environmentally and socially acceptable conditions	
–	Material for the product – aluminium		Follows laws and regulations on procurement	Increases the use of recycled aluminium.	

fn.se/globala-malen-for-hallbar-utveckling, www.globalgoals.org

Building a sustainability strategy

1. A description of the project's planned operations, current phase of development, and how the sustainability strategy will affect the business (potentially higher costs but more attractive for customers and partners, etc.)
   Summarise answers from Step 1.

2. A description of the project's positive effects and which stakeholders may benefit. Stakeholders can be customers, users, society, the environment, etc.
   Explain effects identified in Step 2a – positive effects.

3. A description of the project's negative effects and which stakeholders may be affected.
   Explain effects identified in Step 2a – negative effects.

4. An action plan to increase the positive effects and counteract the negative effects in the near term.
   Explain opportunities identified in Step 2b – Identify improvements and development potential

5. A description of how the business concept contributes to one or more Agenda 2030 goals. Focus on a couple of goals and explain how the business contributes.
   Combine the anticipated effects and the sustainability goals by connecting the targets of each selected goal – Step 3

6. A description of how to measure and follow up on the sustainability strategy.
   Quantify the project's or business's potential impact.

Start building a sustainability strategy

1. Our project is …
2. The positive effects and the stakeholders affected are …
3. The negative effects and the stakeholders affected are …
4. We plan to increase the positive effects by …
   We plan to reduce the negative effects by …
5. We will contribute to the following sustainable development goals …
6. We will measure our effects by …
   We will follow up on our sustainability strategy by …

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Chemical Safety at Lund University

ANIKÓ WENDLER
BIO AND CHEMICAL SAFETY COORDINATOR
LU ESTATES, DIVISION OF SECURITY AND ENVIRONMENT

Health and environmental protection while boosting innovation

- Balance of actions

a) Strong regulation focus vs innovation

- Policy/strategy coherence

a) Safety

b) Circularity

c) Climate neutrality

d) Science

e) Innovation

- Strong enforcement

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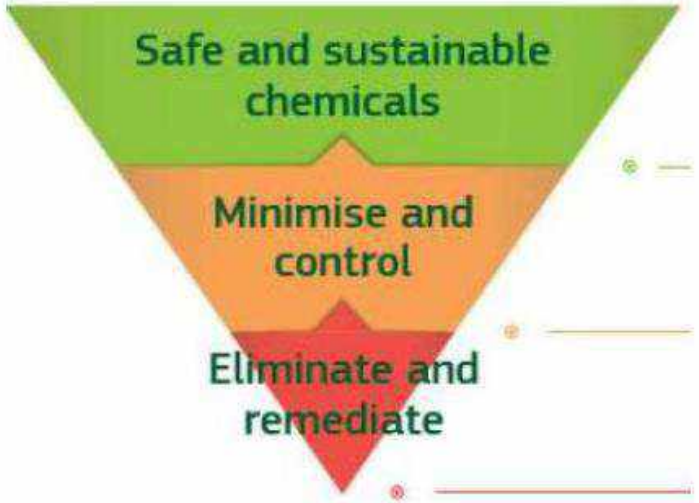
The physical steps

- Legal compliance
- REACH, CLP
- Substitute and minimise as far as possible substances of concern
- Phase out all non-essential of PFAS
- Evironmental footprint
- Education

Chemicals should be used in a way that maximisis their benefits to society while avoiding harm to the planet & people



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What legislation applies to work with hazardous chemicals?

EU directives and Swedish law govern how chemical-related activities are to be carried out.

These are interpreted by the Swedish authorities, which approve detailed requirements that must be met by our organisation.

The handling of hazardous chemicals is regulated in the environment and work environment legislation and in regulations from various Swedish authorities.

KEMI Kemikalieinspektionen

ARBETSMILJÖ VERKET

LÄKEMEDELSVERKET MEDICAL PRODUCTS AGENCY

MSB Myndigheten för samhällsskydd och beredskap

Folkhälsomyndigheten

Strål säkerhets myndigheten

NATUR VÅRDS VERKET

Jordbruks verket

INSPEKTIONEN FÖR STRATEGISKA PRODUKTER

ECHA EUROPEAN CHEMICALS AGENCY

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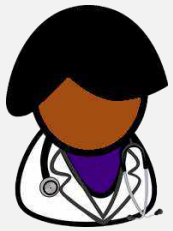
What does it mean to have operative responsibility for chemical safety?

To have good knowledge about and inform staff on chemical-related risks and how to limit these.

Check that risk assessments are carried out prior to commencement of work and that there are written work procedures.

Provide necessary protective equipment: both personal equipment and fixed installations.



Provide information on and offer medical check-ups and training as needed.

Ensure that legislation and procedures are followed regarding purchasing, storage, transport and waste management of hazardous chemicals.

Ensure that there is a register of the organisation's chemical products, and that the quantity of used products is regularly accounted for in KLARA.

Ensure that permits are obtained for hazardous chemicals requiring permits and that specific investigations are carried out when required.

Check that there are procedures for emergencies, e.g., chemical spills and fire.

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Risk assessments

At Lund university we handle many hazardous chemicals that can harm us, our colleagues and surroundings in many ways.

When handling chemicals, it is very important to risk assess our work to minimize incidents and accidents.

AFS 2011:19 A Provision, Swedish Work Environment Authority

Work may not commence before an investigation and risk assessment have been conducted and necessary measures have been taken in order to prevent ill-health and accidents at work.

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Safety data sheets (SDS) according to CLP

16 sections:

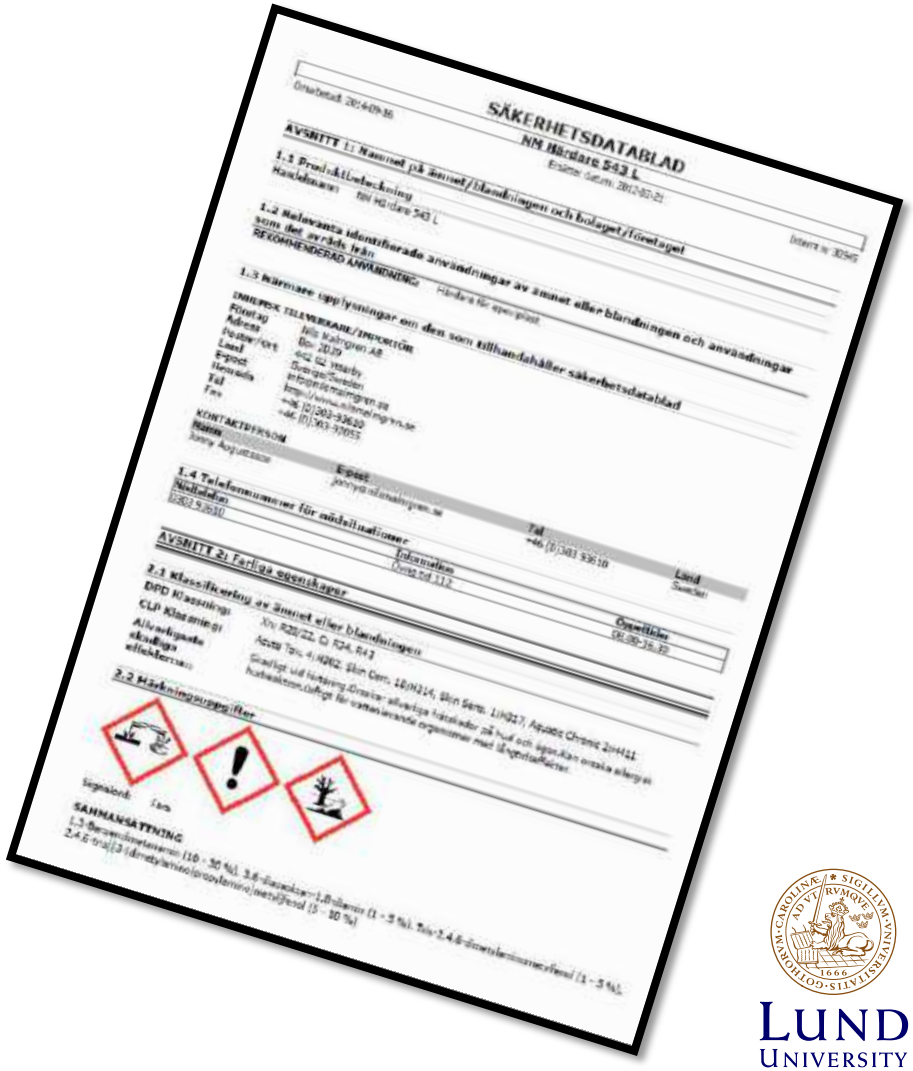
- *Product name*
- *Hazards identification*
- *Composition*
- *First aid measures*
- *Exposure controls/personal protective equipment*

SDS in Swedish is a general requirement.

We are also required to have them in a language that the people handling the product understand, e.g. English.

Must be available where the work is performed.

Provides a basis for chemical risk assessments.



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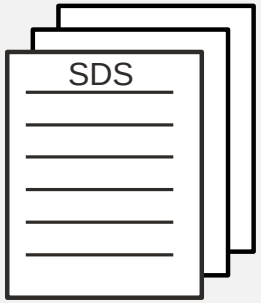
What is KLARA?

A web-based system for handling chemicals. KLARA contains safety information and supportive tools to facilitate our work with chemicals.

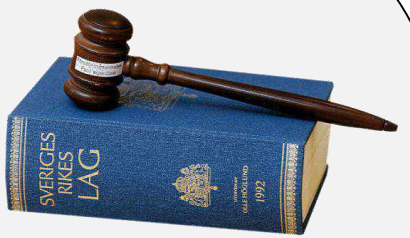
Safety Data Sheets (SDS)



Risk and Precautionary Information

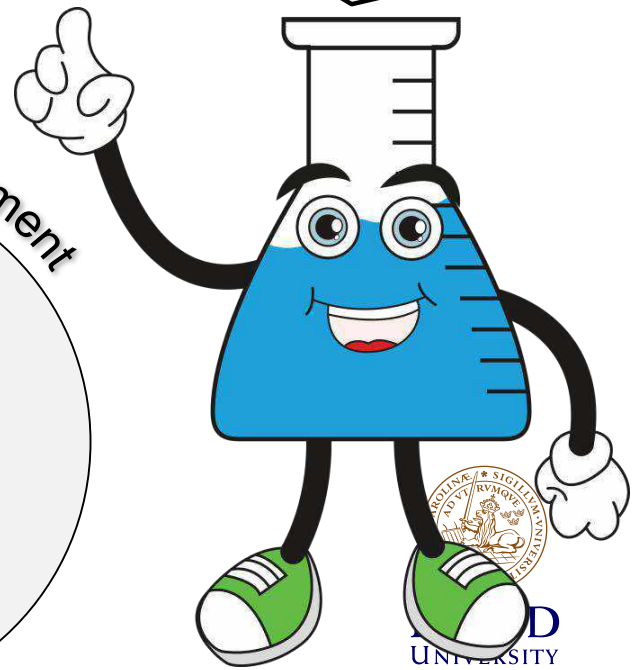
Flammables and Explosives

Cross-references to Legislation

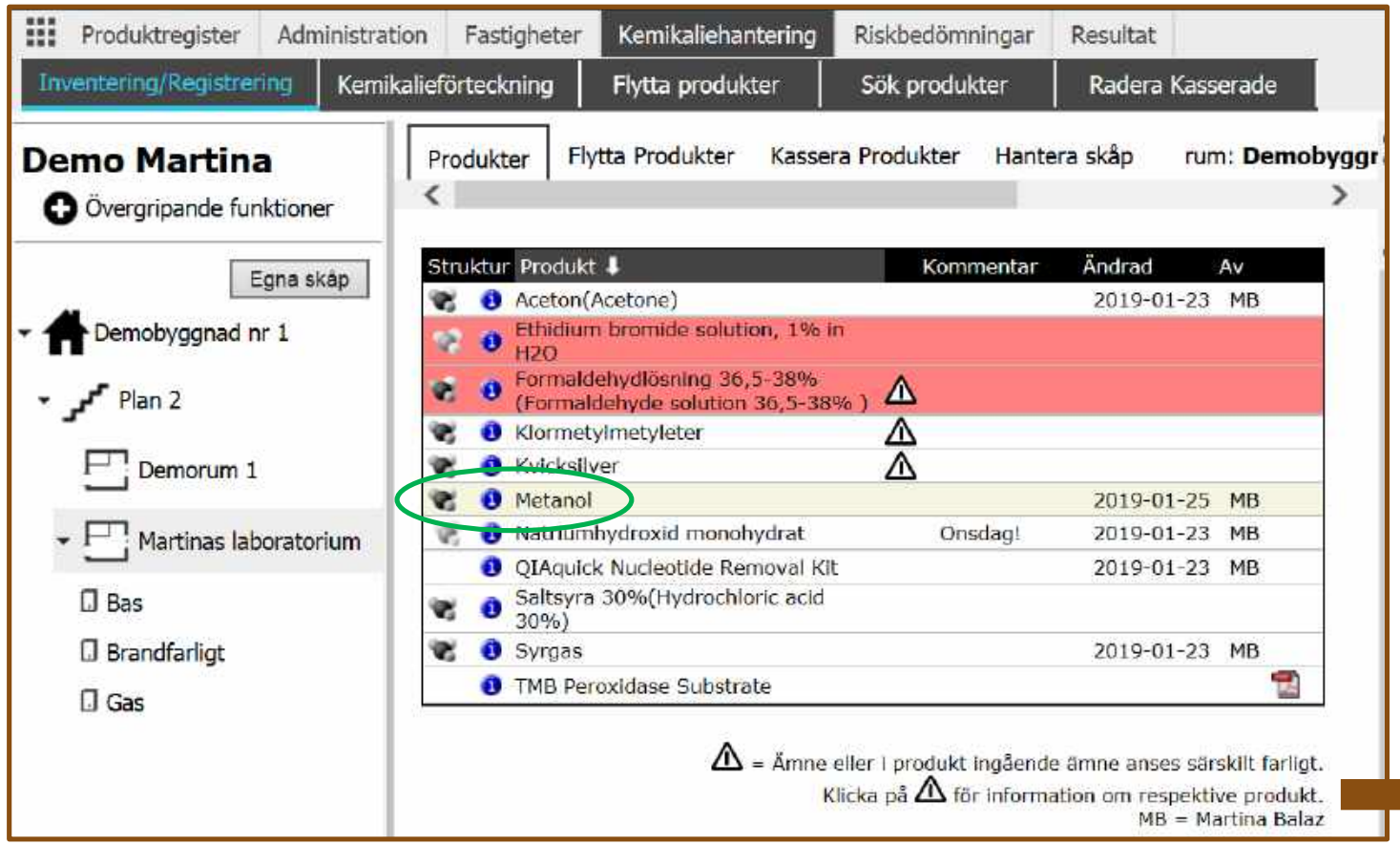


Tool for Risk Assessment

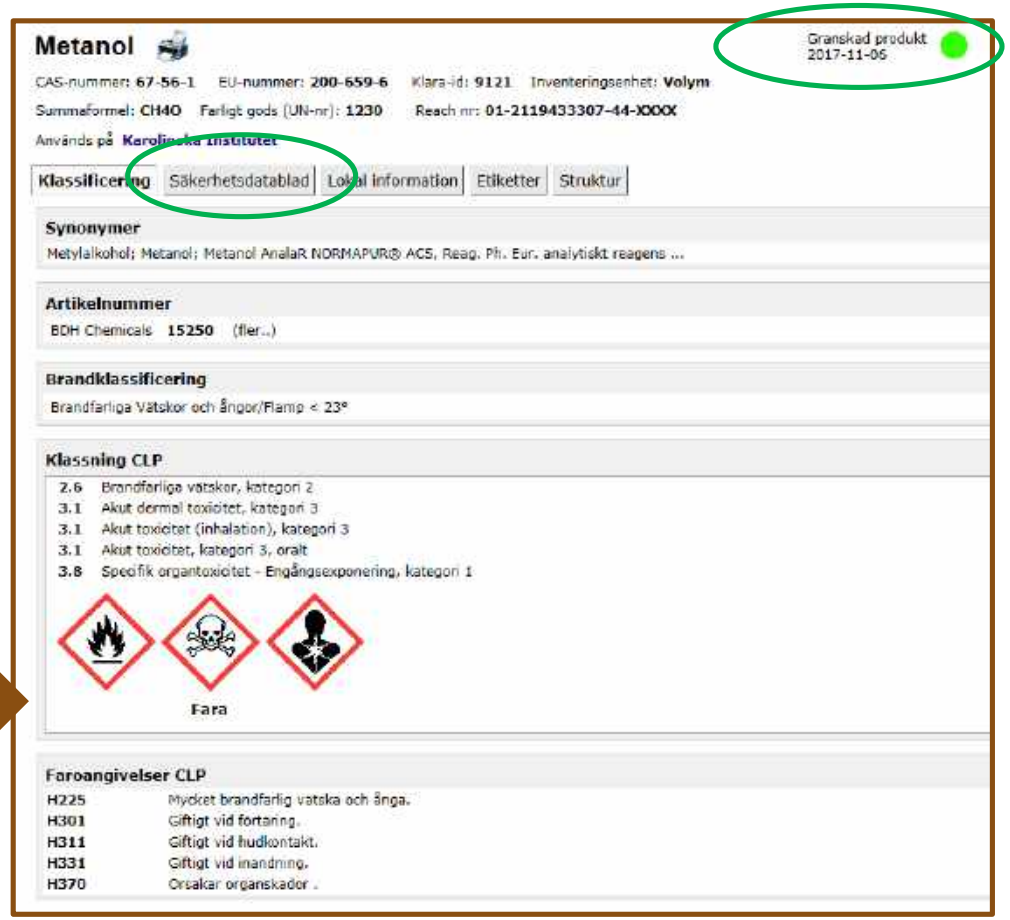
It is a legal requirement to register our chemical products, what quantities we use and if/how they are hazardous to our health and the environment.

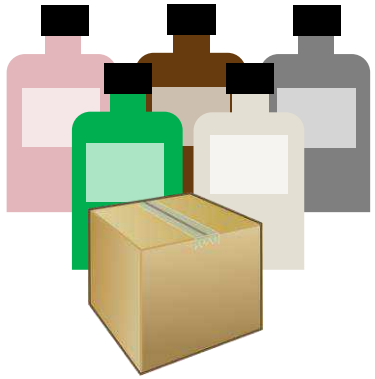


KLARA chemical management system



Infosida om produkt: granskad

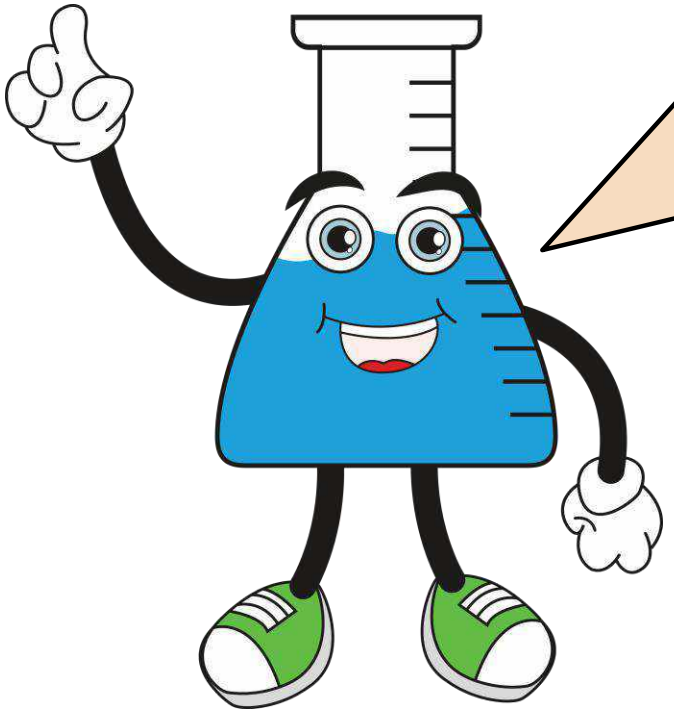




Chemical waste management

At Lund University, we work for an environmentally friendly and sustainable chemical management. An important part of this work is how we handle our chemical waste.

Lund University's policy is that all chemical risk sources must be collected in a safe and responsible manner, in order to prevent the spread of risk sources into wastewater and nature.



How to practically handle chemical waste is described in the university’s Routine for chemical waste management.


Education is the
key to success

Thank you for your attention!

Circular economy and reuse

Carolina Rijpma, Manager interior design

Circular framework agreements

- - disposal of furniture
- - circular services - inventory, valuation, renovation, cleaning
- - acquisition of furniture second-hand - buying or rental.

Ugo - LK Hjelle

Apollo & Eva

Sustainability at Lund University

CLAES NILÉN, ENVIRONMENTAL MANAGER, AND
MARIA NILSSON, ENVIRONMENTAL COORDINATOR

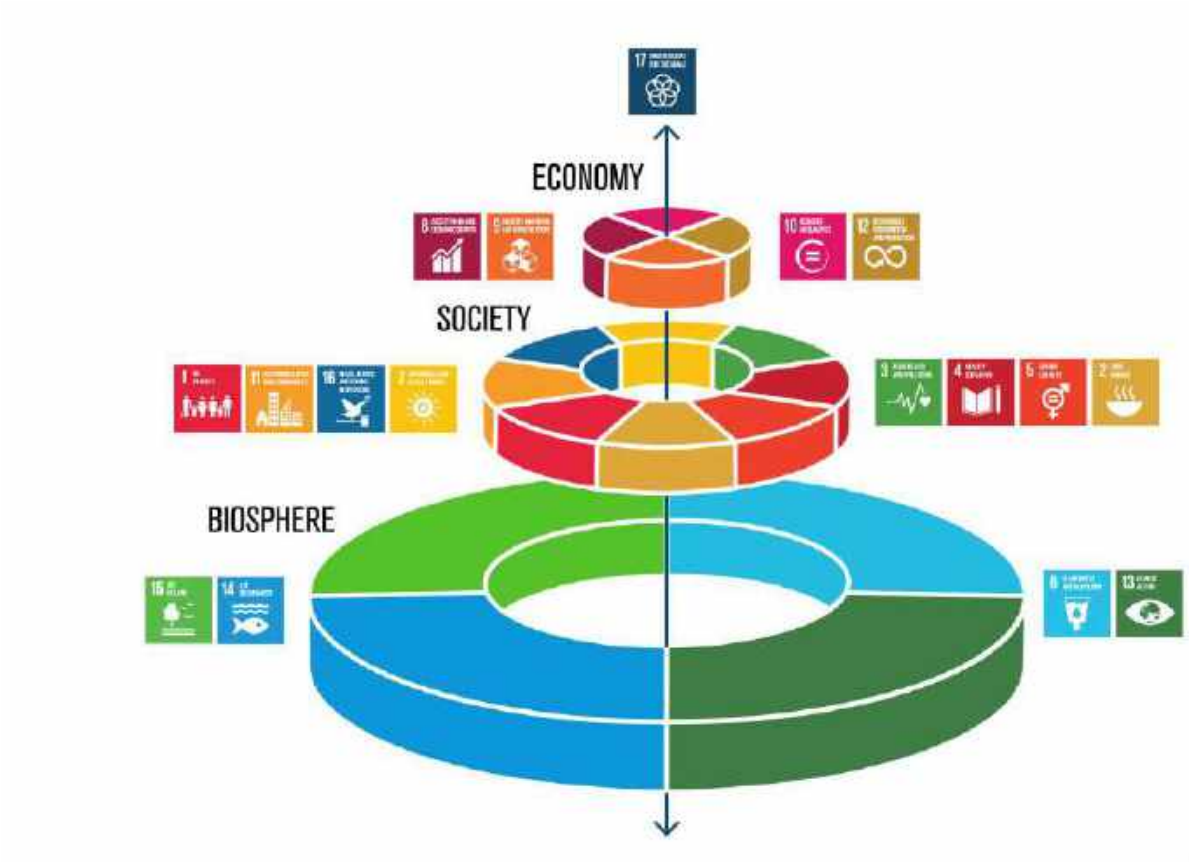
Agenda 9:30-12:00

- Sustainability at Lund University – an overview, Claes Nilén, Environmental manager and Maria Nilsson, Environmental coordinator
- Sustainability at the university's landlord Akademiska Hus, Li Lövehed, Manager energy and sustainability
- Circular economy and reuse, Carolina Rijpma, Manager interior design
- Chemical safety, Anikó Wendler, Coordinator chemical and biochemical safety
- Sustainable campus and facilities, Ulla-Britt Persson, Facilities planner
- Walk through campus area with highlights, Ulla-Britt Persson, Facilities planner

LUND UNIVERSITY

Sustainable development

- Need for adaptation to planetary boundaries → challenges, possibilities
- Society has knowledge – but acts to slow, to little
- Action in cooperation necessary
- Universities need to have ”Live as you learn”-perspective



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QS World University Rankings: Sustainability 2023

Overall Rank	University	Environmental Impact Rank	Social Impact Rank	
11	Uppsala University Uppsala, Sweden	14	=26	Shortlist
12	Lund University Lund, Sweden	13	36	Shortlist
13	University of Glasgow Glasgow, United Kingdom 5+ QS Stars	=25	17	Shortlist

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What do we mean by sustainability?

Strategy for sustainable development 2019-2026 applies to all of the University's activities and all members of staff.

The overall visions in the strategy are:

- **sustainable development is to be integrated** into education, research, external engagement and organisational development
- **employees are well versed** of their roles in sustainability work
- **the University is involved** in development projects, virtual or physical forums and different external engagement activities together with other higher education institutions, the business sector and civil society so that scientific knowledge can provide leverage in society's striving for sustainability
- **the University is a prominent voice** within research and teaching as well as in public debate and cultural life
- through good communication, **our organisation is visible and transparent**

Sustainability at Lund University | Sustainability Forum

LUND UNIVERSITY

The Swedish Climate framework for higher education institutions

- We must reduce our own climate impact in line with society's commitments as they are expressed in national and international agreements.
- We will set far-reaching goals for climate work and also allocate resources so that we can achieve these goals and make follow-ups.

[Higher educations' climate network | Externwebben (slu.se)]

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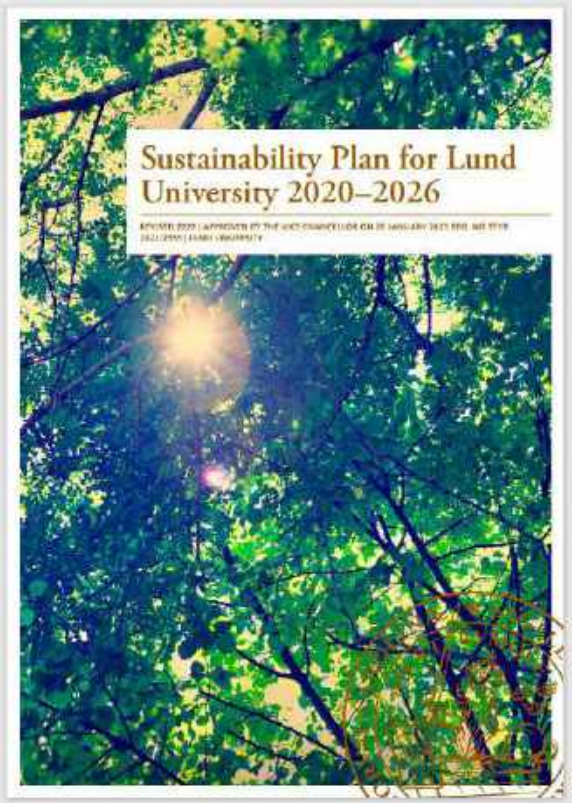
Sustainability Plan 2020—2026

- Establishes concrete goals and initiatives to achieve the overall objectives of the sustainability strategy.
- Contains goals for first and second cycle education, research studies, research, external engagement and management and support organisations.



Sustainability, climate and environment | Staff Pages (lu.se)

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Climate itinerary

- Goal: Greenhouse gas emissions (tonnes of carbon dioxide equivalents) will be reduced by 50 % by 2023 (reference year 2018)

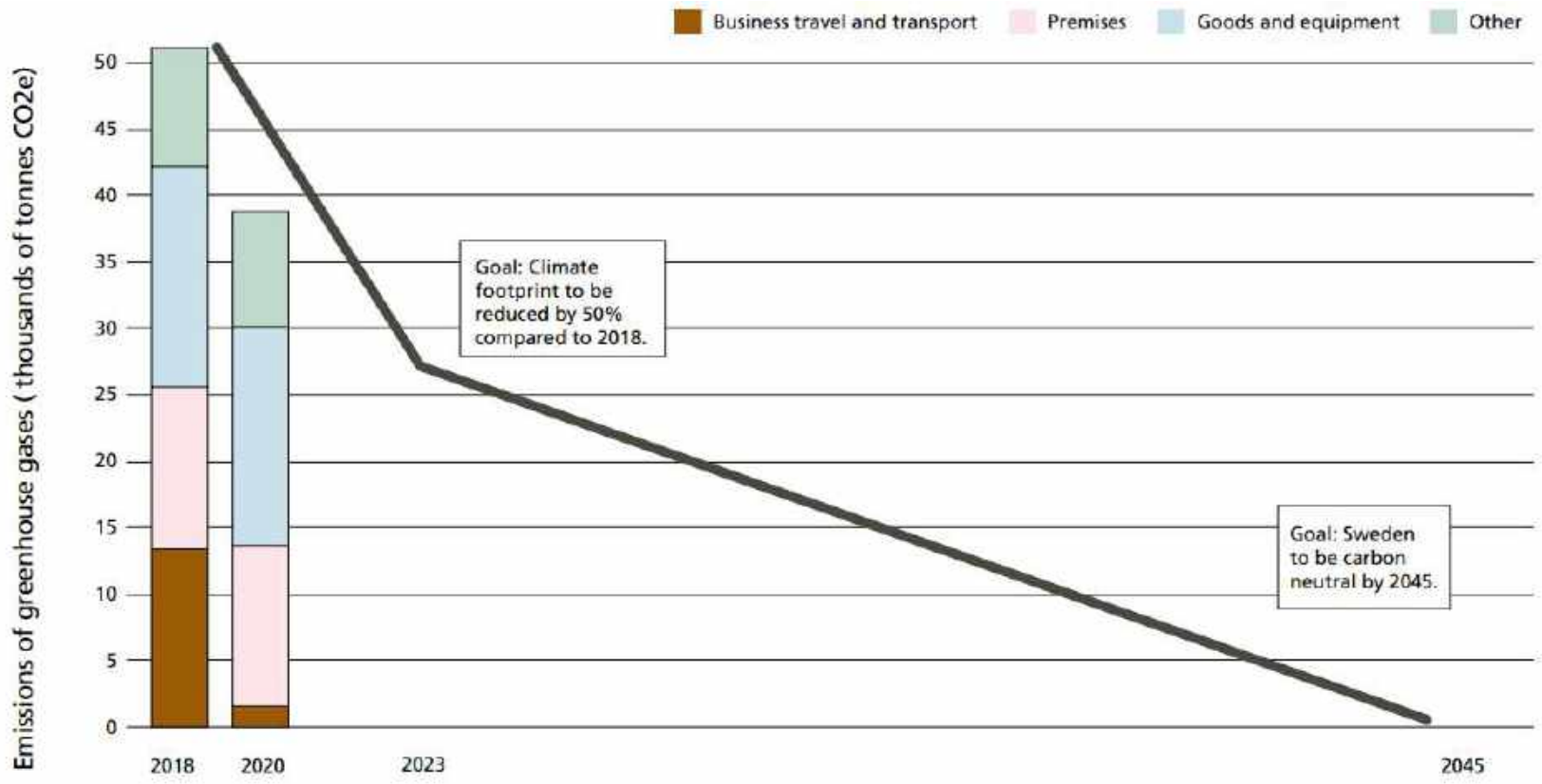

FIGURE 1. An overall road map showing the rate at which Lund University's climate footprint needs to be reduced if climate neutrality is to be achieved by 2045. The figure also shows the University's approximate climate footprint for 2018 and 2020, divided into different sectors: business travel and transport, premises, goods and equipment, and other. The environmental footprint has been calculated using an environmental spend analysis, which was carried out in 2021 for the years 2018 and 2020.

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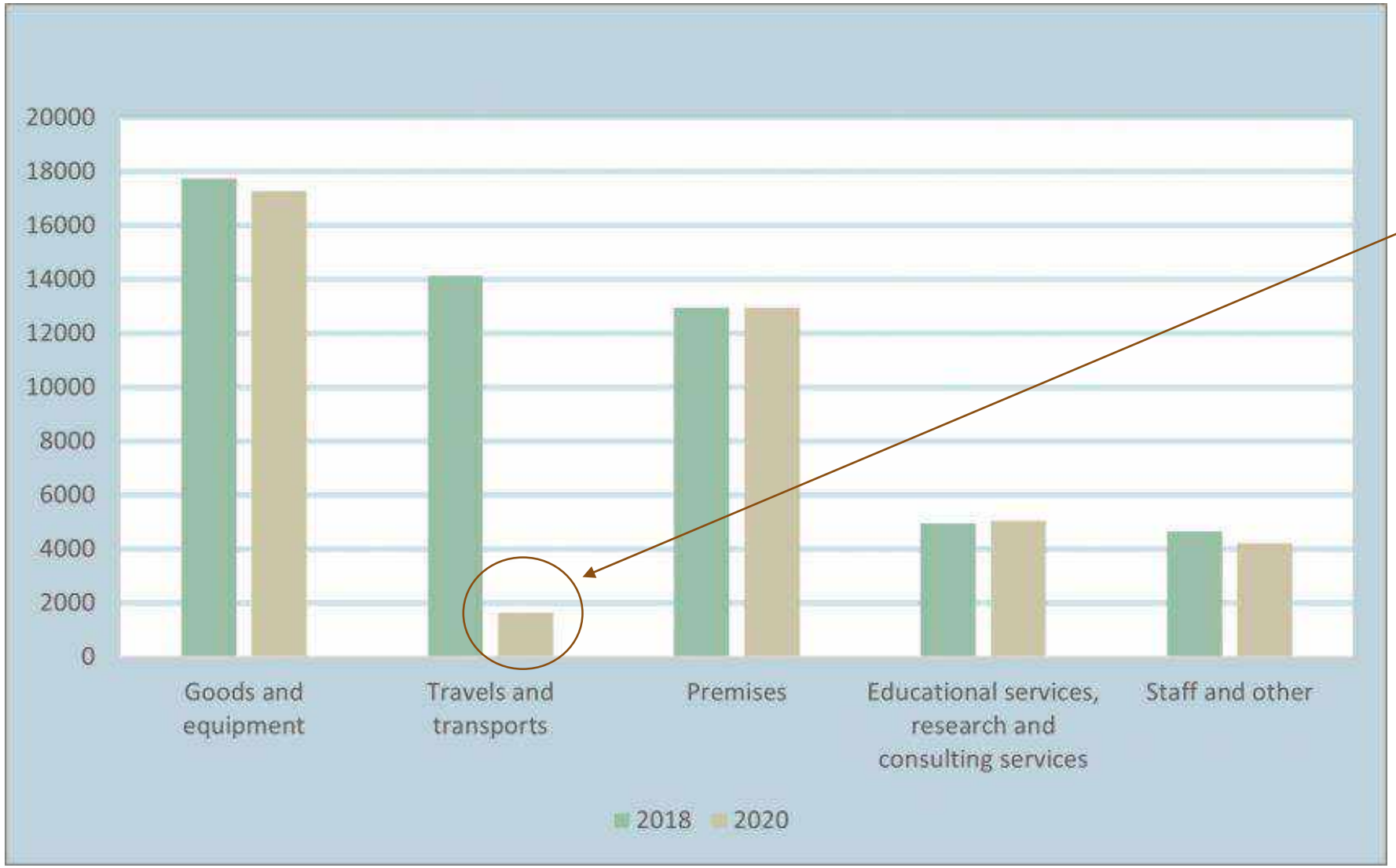
Climate impact (tonnes CO2e)



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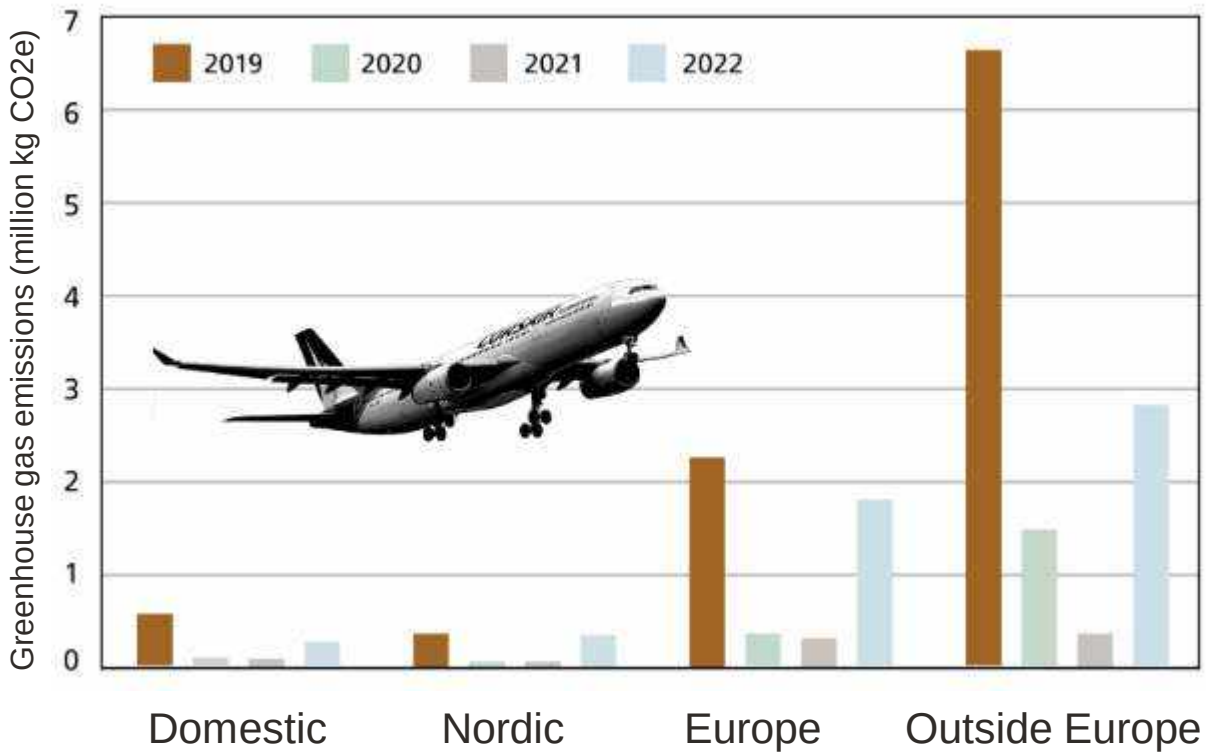
Business travel

- Step 1 – Consider travel-free alternatives
- Step 2 – Manager approval
- Step 3 – Consider the environment, safety and cost



- Fossil-free modes of transport should be the first option
- Trains should be the first option for domestic travel
- New travel agency for rail travel in Europe
- As a public authority, we are not allowed to make use of carbon offset credits, such as the purchasing of emission allowances

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Lund University Magazine – LUM

54 hours one way to join a job meeting on Mallorca | Staff Pages (lu.se)

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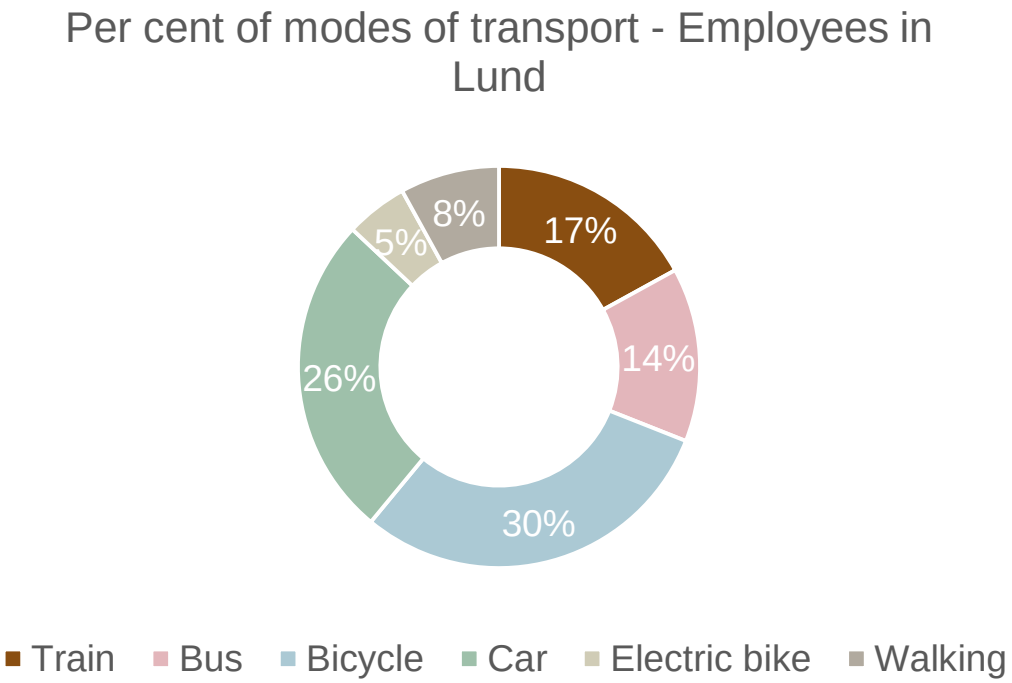
Mobility

- Goal: Reduce the climate impact from travel to and from work and sustainably utilise centrally located land.
- Travel survey conducted in 2022:
- Measures to increase the share of sustainable transport according to LU employees:
  - more frequent public transport services and
  - lower cost of travelling by public transport
- Mobility analysis conducted in 2022:
- Potential for more sustainable travel for employees:
  - 82% of employees in Lund are able to travel sustainably (walking, cycling and public transport) 73% travel sustainably according to the travel survey.
  - the potential to reduce car use is estimated to be: from 27% to 18%



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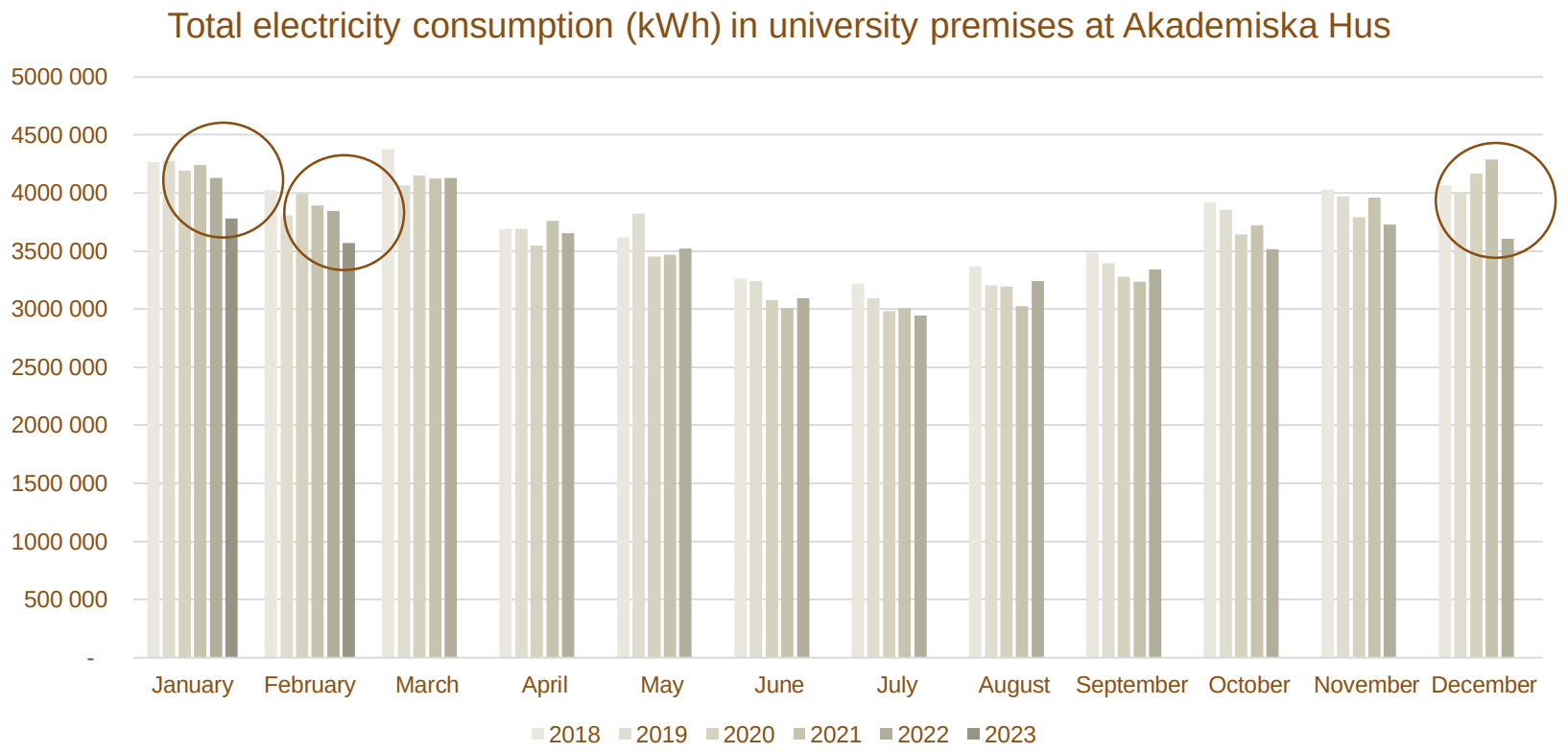
Energy efficiency

- Goal: Improve energy efficiency and reduce the University's energy consumption.
- By spreading experiences and good examples within the University, and supplement energy statistics to create an overall picture of energy use.



The impact of efforts during the winter when the Swedish government mandated all public authorities to save energy.

LUND UNIVERSITY

Investing and divesting

Regulation of placements of donations and foundations, the University Board 2020:

- Account environmental, social and corporate governance aspects (so-called ESG factors) (Environmental, Social and Governance) in investment analysis and decision-making processes, promote the 17 global goals – SDGs, follow declarations and conventions issued by the UN Global Compact, OECD guidelines and the ILO.
- Refrain from investing in companies with a focus on fossil fuels, munitions, pornography, tobacco products and alcoholic beverages or commercial gaming operations.
- All holdings are to be provided open and sufficient reporting on ESG factors.

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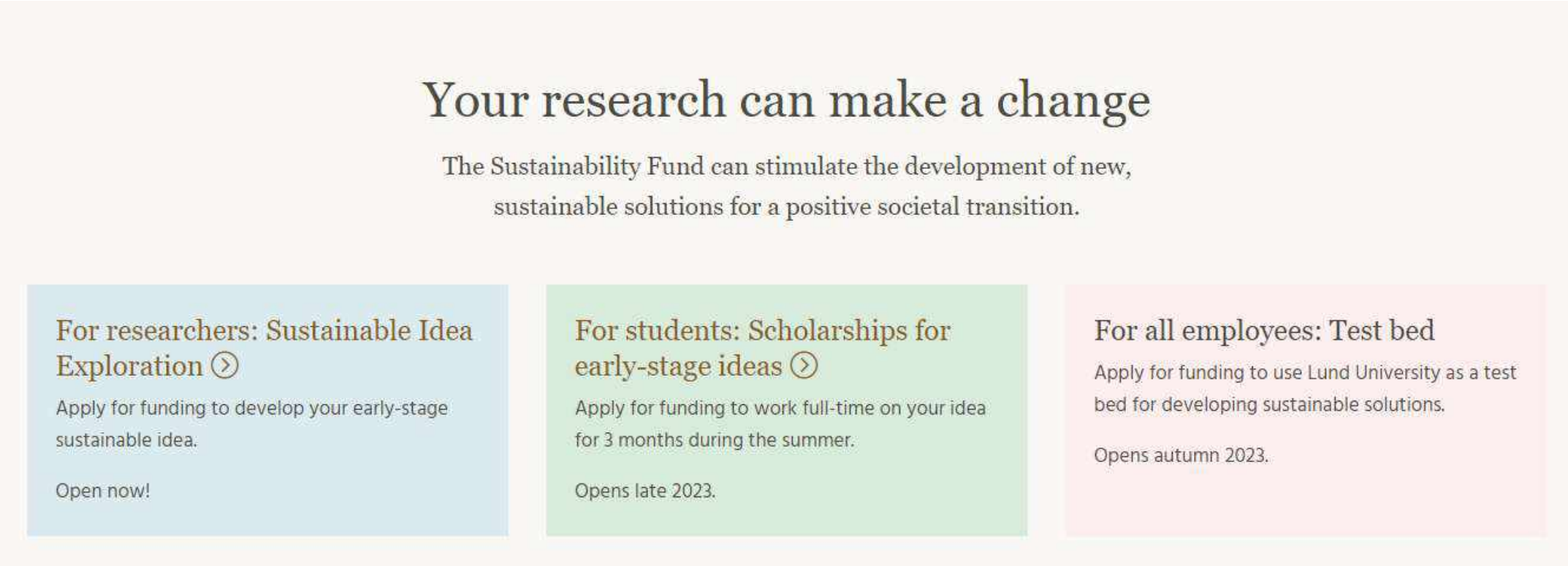
Lund University sustainability fund



Lund University Sustainability Fund | LU Innovation

Four projects awarded grants from the Sustainability Fund | Staff Pages (lu.se)

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Contact info

- Claes Nilén, Environmental manager, claes.nilen@bygg.lu.se
- Maria Nilsson, Environmental coordinator, maria.nilsson@bygg.lu.se

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Akademiska Hus Climate Strategy

A serious approach to climate responsibility

Erasmus meeting Lund 2023-06-13

Li Lövehed, Akademiska Hus

AKADEMISKA HUS

We are one of the largest property companies in Sweden

State-owned, with a focus on colleges and universities

Properties from north to south

Approx. 530 employees

Turnover SEK 7.1 billion

Property portfolio SEK 115.4 billion

Market share of approx. 60 per cent

Project portfolio SEK 15.3 billion

AKADEMISKA HUS

To focus on sustainability and long-term goals is obvious to us

Our sustainability areas

ECOLOGICAL SUSTAINABILITY

We are part of an ecosystem with limited resources and are doing what we can to mitigate climate change.

OUR FOCUS

1. Achieve climate neutrality by 2035 throughout the value chain.
2. Reduce the amount of delivered energy by 50 per cent between 2000 and 2025.
3. Improve biodiversity on campus and throughout the value chain.

SOCIAL SUSTAINABILITY

We develop sustainable, vibrant and inclusive campus environments and serve as a force for good in society.

OUR FOCUS

1. Develop sustainable campuses with healthy buildings.
2. Assume social responsibility with a focus on student well-being.
3. Be a sustainable company based on gender equality, with an inclusive culture, good ethics and a good working environment.

ECONOMIC SUSTAINABILITY

We use our resources efficiently, future-proof our properties and work to ensure that our business is long-term and sustainable.

OUR FOCUS

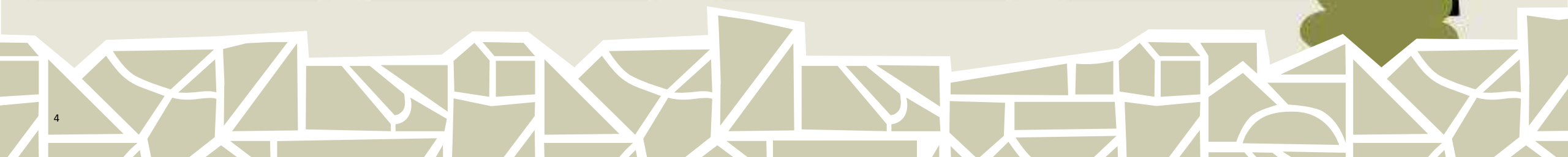
1. Make sustainable and long-term investments.
2. Future-proof campuses and address climate risks.
3. Promote circularity and resource- efficient use of premises.

CULTURAL SUSTAINABILITY

We preserve our historic campus environments and make them more attractive and inspiring through design and art.

OUR FOCUS

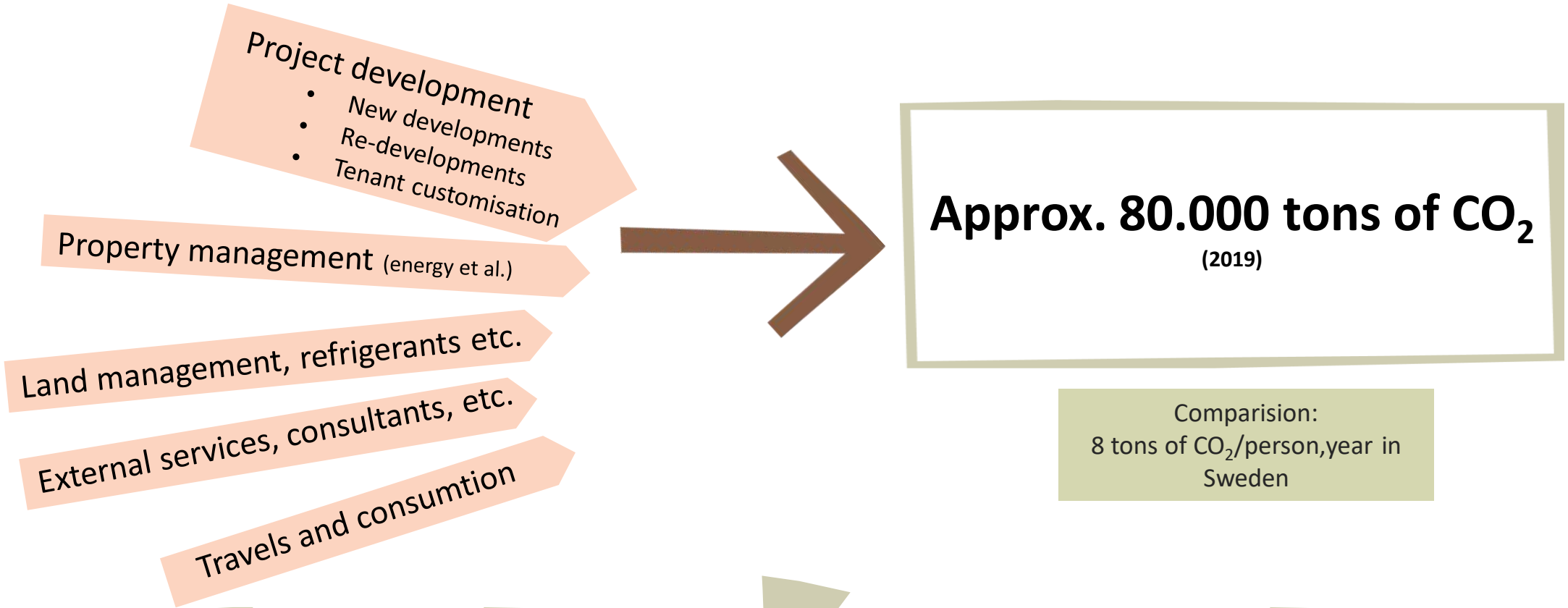
1. Preserve historic buildings and campus environments.
2. Develop good place identity on our campuses.
3. Manage existing and provide space for new art in our knowledge environments.



A serious approach to climate responsibility!

Akademiska Hus' climate impact

General overview of all our operations



Akademiska Hus’ climate footprint

… mainly comes from **two key areas**:

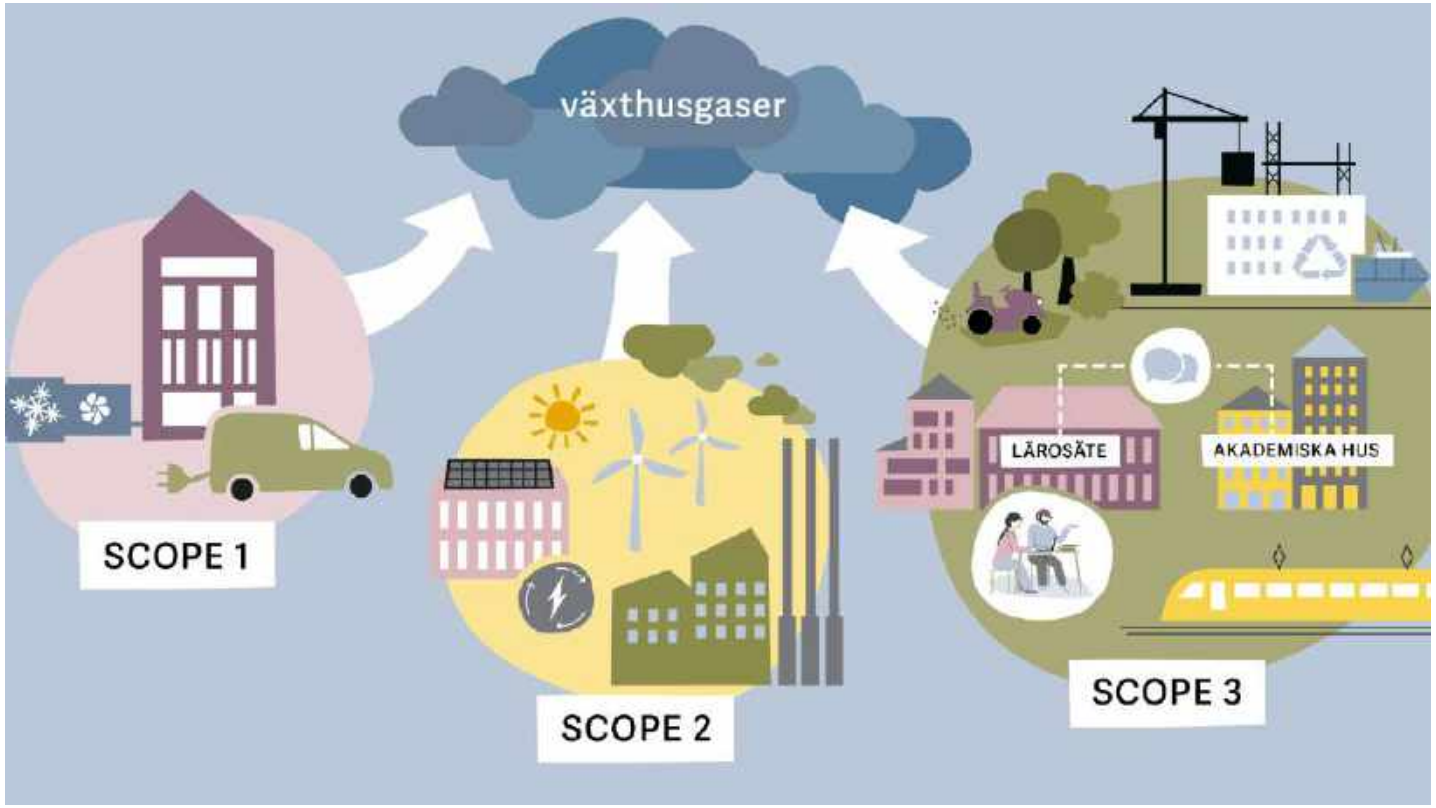
Project management

The climate footprint from the construction of new buildings and redevelopments

- Material used in the projects
- Transportation and waste in the construction process

Property management

- Climate footprint from energy used in daily operations and from customers’ activities
- Climate impact from vehicles that the company uses
- Land management etc.



We follow the global standard "Greenhouse Gas Protocol" (GHG), where the reporting is divided into three *scope* categories

Akademiska Hus’ climate and energy strategy

- Established by AH’s board in December 2021
- Read it on akademiskahus.se

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Akademiska Hus will gradually reduce
the climate impact from the entire value chain
in order to demonstrate climate neutrality by 2035.

*Total climate footprint from 2019

The roadmap to become climate neutral by 2035


Akademiska Hus

Färdplan mot klimatneutralitet 2022-2025

Färdplanens roll

The roadmap sets out priority areas and activities for:

- The property unit
- The project unit
- Technology and Service unit
- Staffs

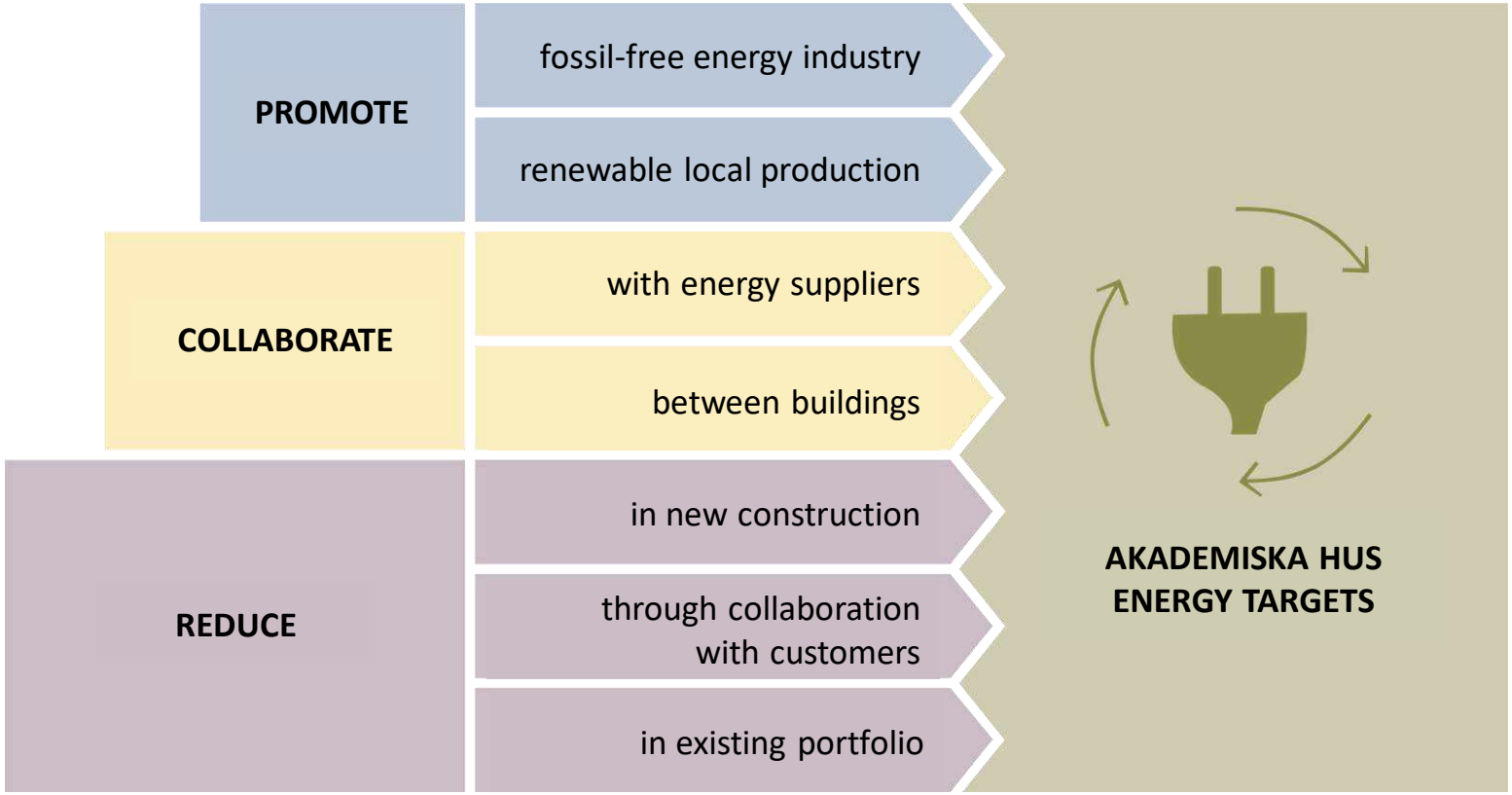
Climate Footprint – Property Management

Focus on energy – key to climate neutrality by 2035

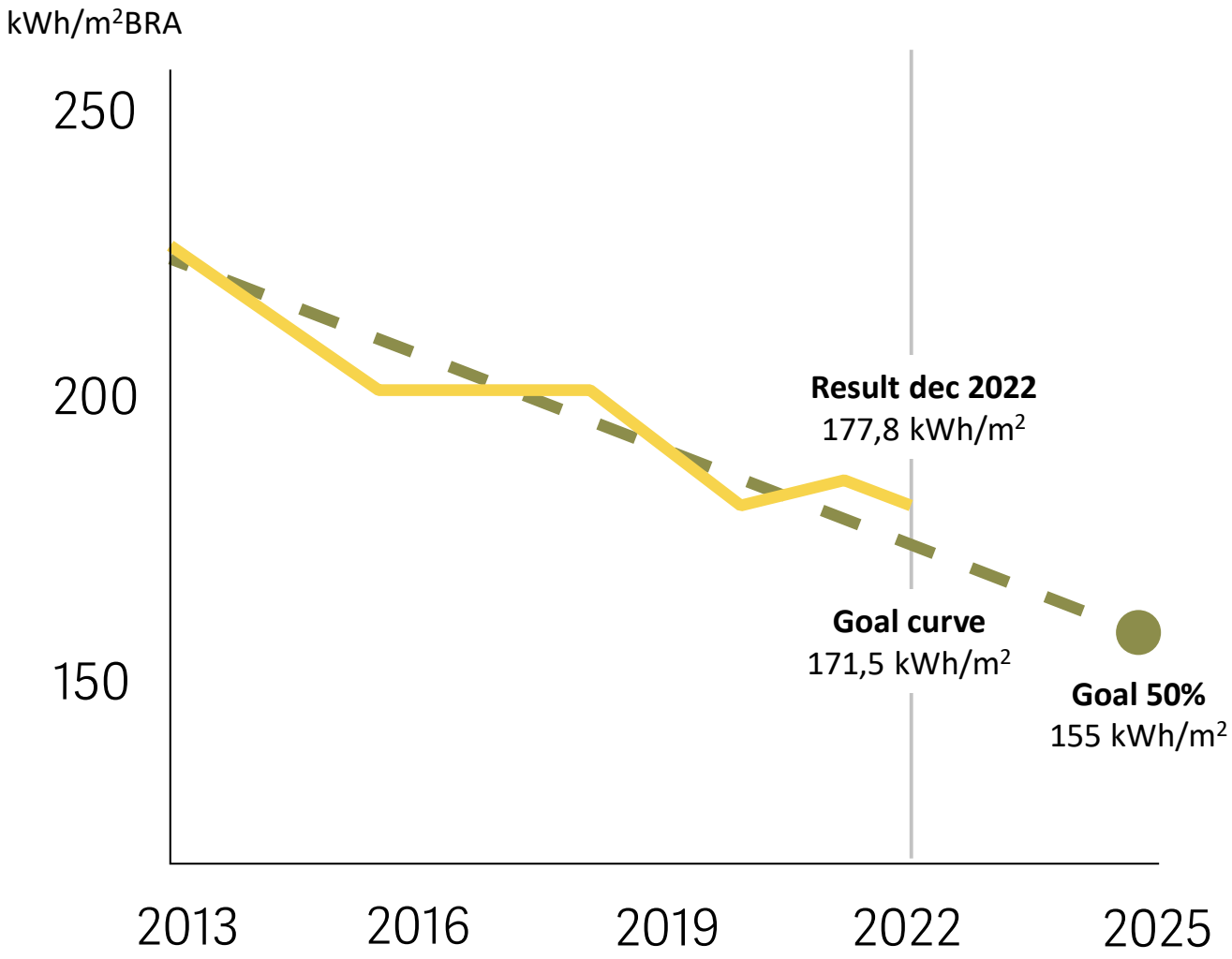
Energy reduction goal since 2006:
reduce the amount of delivered energy by 50 percent by 2025, calculated from the base year 2000.

To achieve the energy target, while also moving towards climate neutrality by 2035, we are active in three main areas –

Reduce, Collaborate and Promote.



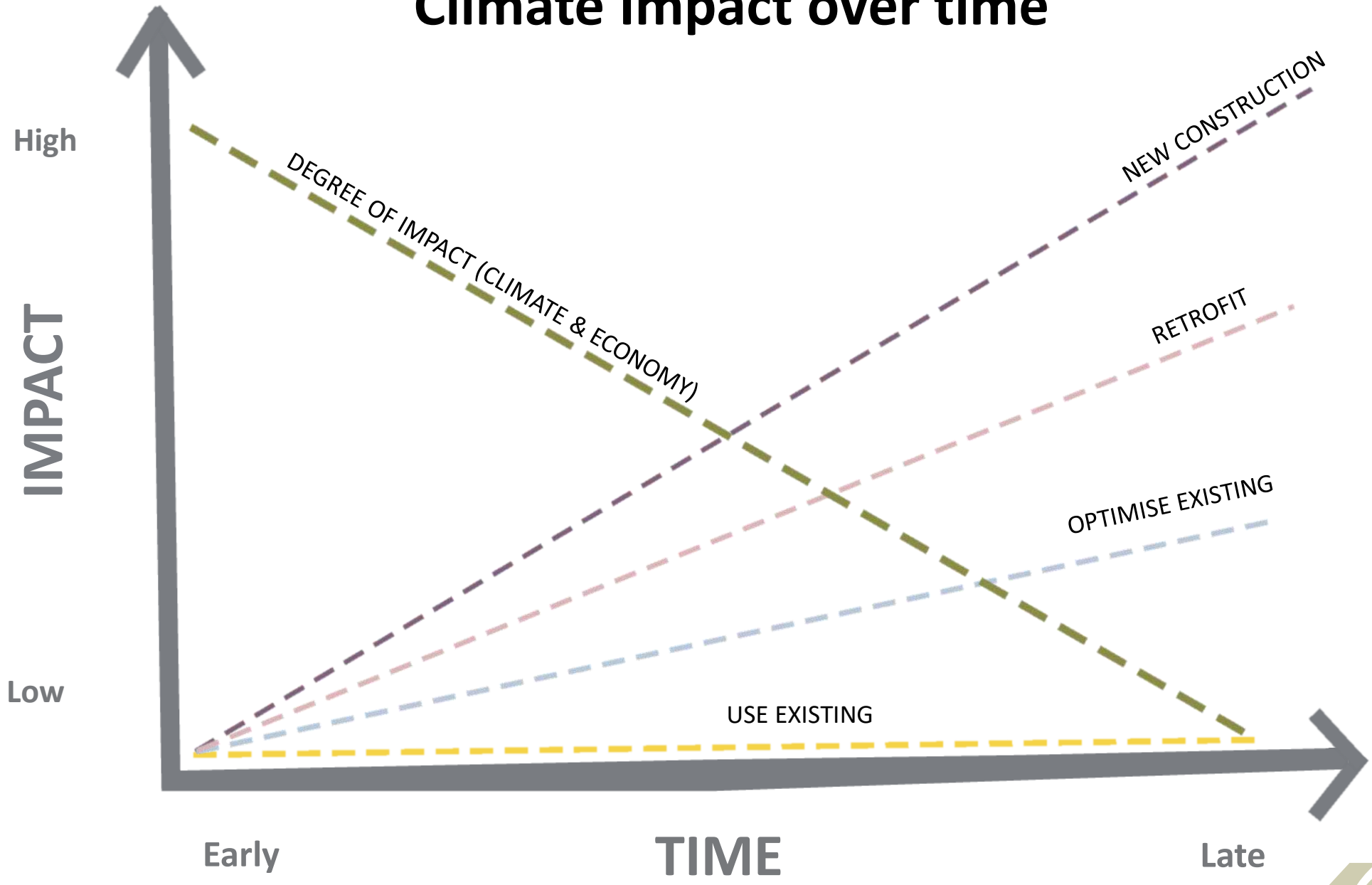
Strong focus to reach the targets



Result June 2023:
- 44%

Climate Footprint – Construction Projects

Climate Impact over time



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Four-step principle

"Be prepared" – "We should know our buildings, take use of date, manage and take care of our buildings!"

Examples of activities: maintenance plans, energy optimisation, digital twins, inventory analysis, campus plans, strategic sustainability and collaboration agreements, etc.

1. Keep it – "Do nothing!"

Analyse the needs and consider other actions than construction.

Examples of measures: Digitalisation, organisation, planning, booking system, etc.

2. Optimise – "Be smart!"

Analyse the needs and take measures that lead to a smarter and more efficient use of the buildings.

Examples of measures: Space efficiency, higher utilisation rate, relocation, sharing economy solutions, etc.

3. Space customisation - "Refine!"

Carry out limited redevelopmenets where they do the most good based on analysis of needs and space utilisation

Examples of measures: Redevelopments, renovations, reinforcements, upgrades, reuse, etc.

4. Re-build and build new – "Build for the future!"

Implemented only if the need cannot be met in the three previous steps. This means new investments and/or major redevelopment measures. When rebuilding, building extensions and making new constructions, it is important to include all analyses from the above steps.

Examples of measures: Extensions and new constructions as well as larger redevelopments, etc.

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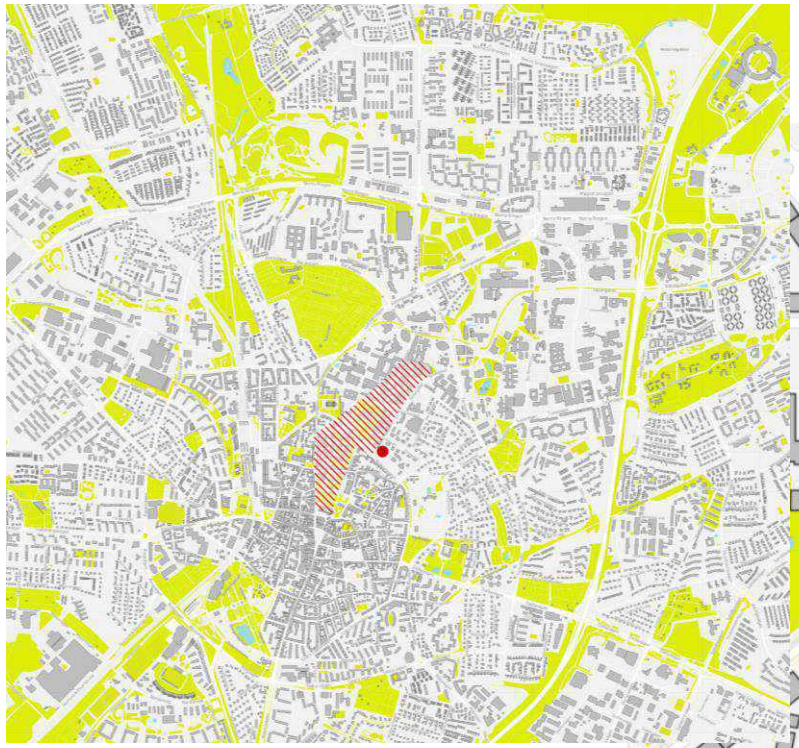
Thank you!

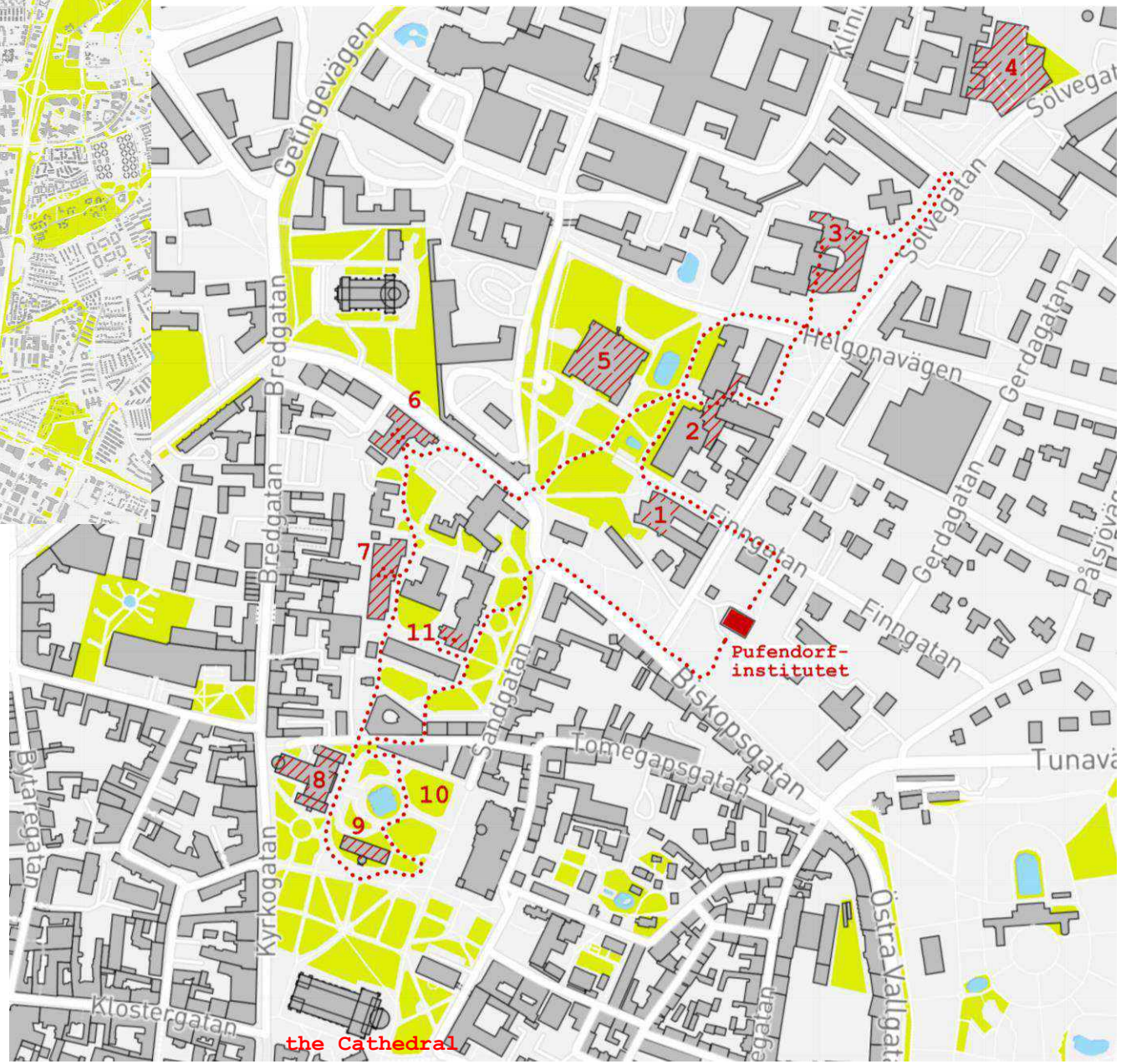
Follow us on social media:

AKADEMISKA HUS

Walk through the central campus area with highlights



Campus Paradis and Helgonabacken, parts of the central campus area at Lund University



1. **Skissernas museum**
   The world´s largest collection of sketches and public art in early stages
2. **SOL**
   Centre for Languages and Literature
3. **LUX**
   Joint faculties of Humanities and Theology
4. **FORUM MEDICUM**
   The Faculty of Medicine
5. **Universitetsbiblioteket**
   Lund University Library
6. **Gamla köket**
   School of Social Work
7. **EDEN**
   Department of Political Science
8. **Universitetshuset**
   The main University building
9. **Kungshuset**
   "The King´s House" built (1578-1584) by the Danish king Frederich II as residence for the Bishop
   The building is currently undergoing an adatation to accommodate the rector´s office
10. **Universitetsplatsen**
11. **Förvaltningens cykel-förråd**
    The administration´s bicycle storage