

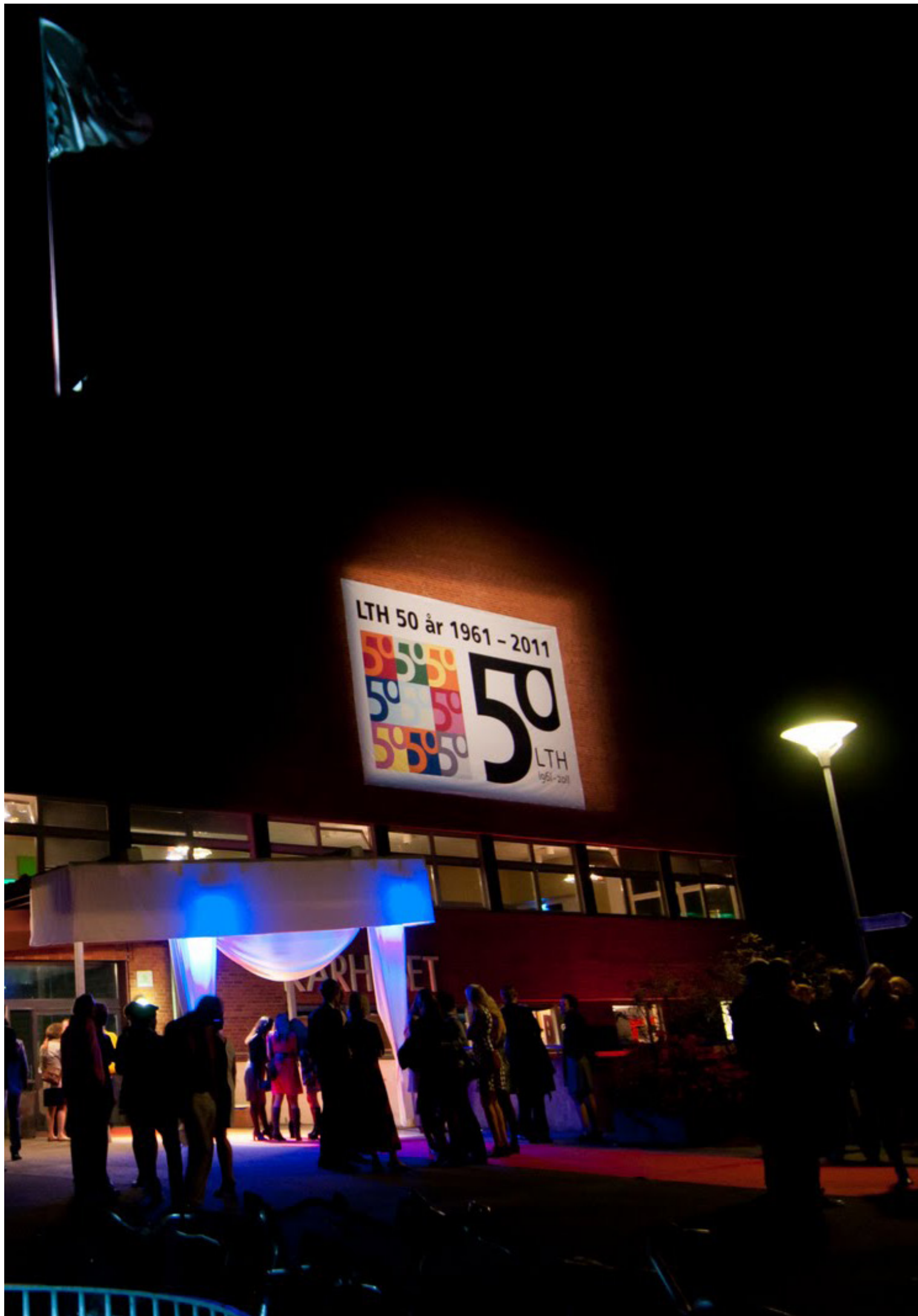


LUND  
UNIVERSITY

# Strategic plan

FACULTY OF ENGINEERING, LUND UNIVERSITY | 2012 – 2016







# Improving our world and the human condition

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**THE FACULTY OF ENGINEERING, LTH**, is a faculty of Lund University and has overall responsibility for education and research in engineering, architecture and industrial design at the University. Our strategies are based on diversity and crossboundary cooperation and are characterised by gender equality, participation, quality and renewal.

## OUR GENERAL GOALS

- » We have a stable scientific and artistic foundation for education in the first, second and third cycles.
- » We have cutting-edge expertise in a number of fields where research is conducted at the absolute international forefront.
- » Our PhD graduates have broad skills that lay the foundations for innovation and entrepreneurship.
- » Our third-cycle programmes are at the forefront in their subjects and of a high international standard.
- » Our programmes and courses meet the current and future demands of students and employers.
- » Our programmes and courses are research-based and of high international standard, characterised by pedagogic awareness and teaching skill.
- » We are an important long-term partner for the business sector and wider society.
- » Our activities give rise to innovations.





AERIAL PHOTOGRAPH OF LTH IN LUND, 2010. PHOTO: GUNNAR MENANDER



# Foreword

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LTH has just celebrated its fiftieth anniversary and it is particularly fitting to begin the next fifty-year period with an updated strategic plan. We have developed into one of Sweden's leading schools of engineering, architecture and industrial design and have many reasons to feel proud. It is a challenge to take advantage of the opportunities which this creates. The strategic plan is to be viewed in this context – as a point of reference for the faculty and as an aid to select the right paths and set the right priorities for the future.

LTH is part of Lund University and this influences our vision:

*A cross-boundary faculty of engineering within a world-class university that works to understand, explain and improve our world and the human condition.*



**Anders Axelsson | Dean, LTH**



# Diversity is our strength – excellence is a product of breadth

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## THE STRATEGIC PLAN

**LTH'S STRATEGIC PLAN** lays a foundation for the development of our value-adding core activities: research, third-cycle education, first- and second-cycle education, and engagement with business and society.

**THE STRATEGIC PLAN** describes our goals, strategies and priorities for 2012–2016. Linked to the plan are quantitative goals and a plan for follow-up.

**THE PLAN LINKS IN** with the Lund University strategic plan and is complemented by action plans at all levels within LTH.

## VISION

**A CROSS-BOUNDARY FACULTY OF ENGINEERING** within a world-class university that works to understand, explain and improve our world and the human condition.

## MISSION

**THE FACULTY OF ENGINEERING, LTH**, is a faculty of Lund University and has overall responsibility for education and research in engineering, architecture and industrial design at the University. LTH operates mainly in Lund and at Campus Helsingborg.

**WE GENERATE AND COMMUNICATE KNOWLEDGE** and make important expertise available to society. This expertise is brought to use in development and innovations.

**THE ACTIVITIES OF THE FACULTY ARE CARRIED OUT** at departments which provide a good environment for work and study. The departments encompass multiple research fields and guarantee a sustainable environment for research and education. All activities are characterised by high demands on quality and renewal and the integration of education and research.

## CORE VALUES

**IN ACCORDANCE WITH LUND UNIVERSITY'S** core values, we defend human dignity and freedom, all people's equal worth, and human rights.

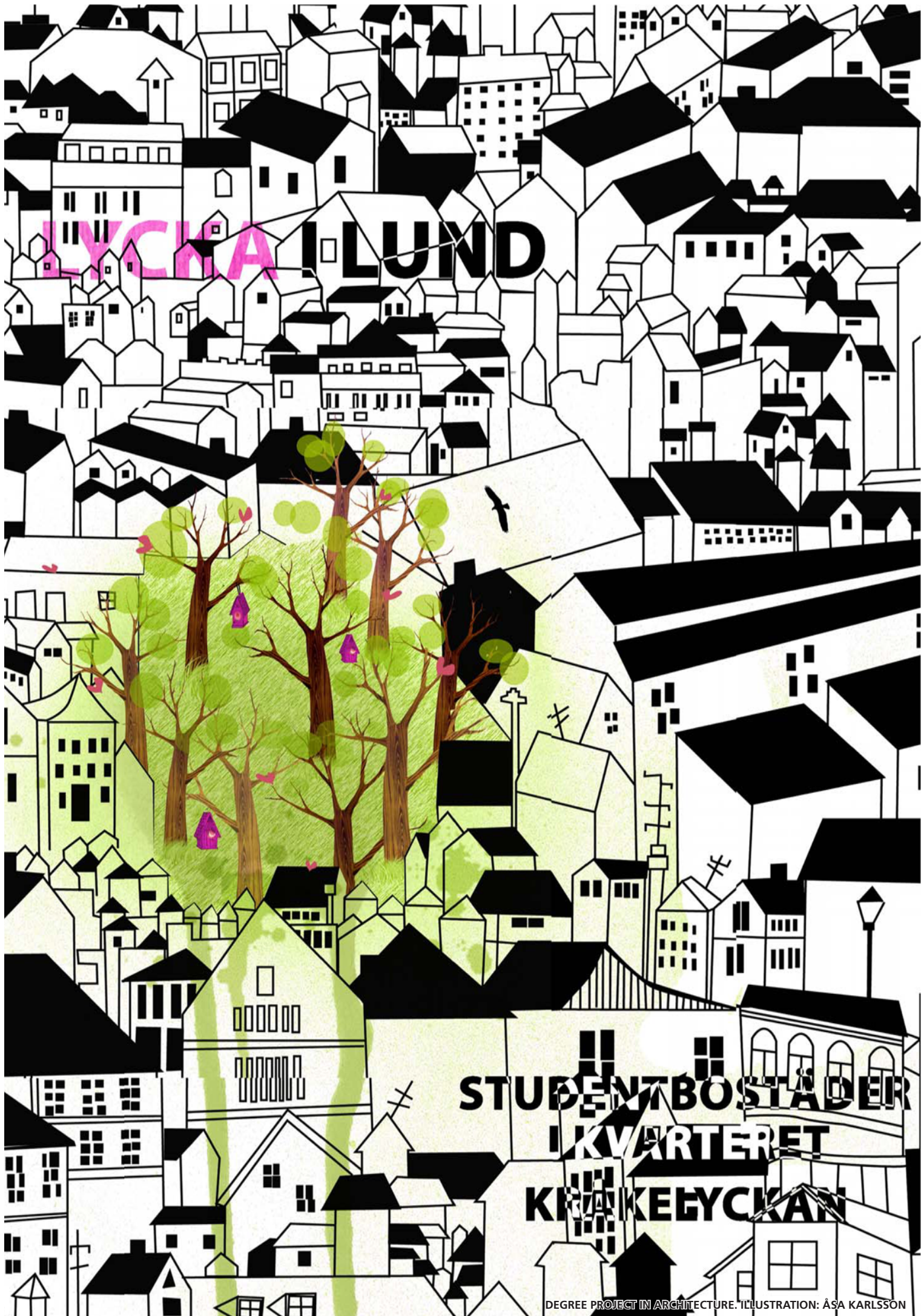
**DIVERSITY, GENDER EQUALITY AND EQUAL OPPORTUNITIES AMONG** staff and students help to ensure job satisfaction and high quality in the faculty's activities.

**OUR ORGANISATION** is characterised by continual development to create a good working environment where all staff and students have the best opportunities to develop.

**ALL MEETINGS BETWEEN** staff and students, and all contact with the world around us, shall be characterised by respect and integrity.

**OUR OPERATIONS SHALL BE CHARACTERISED** by openness, international cooperation and a critical approach that contributes to the democratic and sustainable development of society.









AERIAL PHOTOGRAPH OF LTH IN LUND, 1961



# 50 years of quality and renewal

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## **LTH STANDING STRONG**

**OVER 50 YEARS, EDUCATION,** research and innovations with their roots in LTH have made a significant and lasting impression on society.

**TODAY, WE ARE HOME TO MANY OF** Sweden's most attractive study programmes and have broad research with a number of cutting-edge fields in which the research is world-class.

**DELIBERATE, STRATEGIC DECISIONS HAVE** contributed to our successes. The previous strategic plans of both Lund University and LTH have formed important aids.

**WITHIN RESEARCH, WE HAVE GAINED** strength through strategic prioritised investments of shared resources in strong research groups with cross-boundary activities. Within education, we have profiled our operations by prioritising professional programmes, educational development, schools outreach and internationalisation.

**WE ARE LOCATED IN AN EXPANSIVE** region with innovative businesses in fantastic, distinctive cities and are well integrated into a university that is among the best in the world. We work to make our campuses vibrant, to create meeting places and to exploit their development potential. Our employees are committed and highly skilled across a broad range of fields.

**OUR OPERATIONS WILL CONTINUE TO** develop thanks to the personal motivation, quality consciousness and capacity for renewal of our students and staff. LTH is a place where people can grow.

**THE STRATEGIC PLAN SHALL PROVIDE** guidance to enable us to build on our strengths.

## **CHANGE CREATES OPPORTUNITY**

**THE PACE OF CHANGE IN SOCIETY** is rapid. Globalisation is the most important external factor influencing LTH and our development is dependent on how well our research, education and administration is internationalised.

**GLOBAL CHALLENGES SUCH AS ENERGY SUPPLY,** climate change, public health and demographics have a direct and indirect influence on all our activities. Also in the short term, and more locally, there are important changes taking place which we must take on board.

**CROSS-BOUNDARY TECHNOLOGY** and interdisciplinarity anchored in strong individual disciplines, is growing in importance. The development of ESS, MAX IV and Medicon Village provide us with unique opportunities for innovative research and education in collaboration with partners in academia and industry.

**THE LEVEL OF EDUCATION WORLDWIDE IS RISING** as economies become increasingly knowledge intensive. Competition for creative employees is global and is becoming fiercer. For this reason, demand for highly educated workers in our areas of activities is set to remain very high. Fewer young people in Sweden will, however, increase competition for students, while demand for professional development in the context of lifelong learning will increase. The digital revolution will affect the way we communicate knowledge and deliver education.

**HIGH TECHNOLOGY PLAYS AN INCREASINGLY IMPORTANT ROLE** in people's lives, yet it seems to be becoming increasingly invisible. Knowledge of technology and understanding of the role of technology will therefore no longer only be a concern for engineers.



# Visibility, openness, clarity and participation

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## MANAGEMENT AND LEADERSHIP

**LTH'S MANAGEMENT AND OUR FACULTY** administration have the task of creating the best possible conditions for our students and departments to undertake teaching, learning and research.

**THE ROLE OF THE FACULTY MANAGEMENT IS TO ORGANISE** the task of management, exercise leadership and represent LTH within Lund University and to the outside world. Visibility and openness – with good internal and external communication – are of utmost importance.

**DECISIONS SHALL BE AS DECENTRALISED** as possible. Clarity on what decisions are made, who makes them and on what grounds they are made is crucial to the efficiency of our organisation.

**VISIBILITY, OPENNESS AND CLARITY** also lead to participation.

**LEADERSHIP IS EXERCISED BY ALL THOSE** who have responsibilities at faculty and department level and on our boards and committees. Everyone shall receive good support for their leadership role.

**IT IS IMPORTANT FOR LTH** that many people are prepared to contribute their different skills and perspectives to the collegial discussion and management work. The representation of our activities on decision-making and preparatory bodies shall reflect our diversity.

**EDUCATION AT LTH IS MAINLY** in the form of programmes. The management and boards of our programmes have joint strategic and operational responsibility for the study programmes and form the cornerstones of the management structure.

## FACULTY ADMINISTRATION

**LTH HAS MADE A STRATEGIC DECISION TO** organise many administrative processes in a central faculty administration. This is an integrated part of our research, education and third-stream activities and is key to professionalism, continuity and correct exercise of public authority.

**WE STRIVE FOR CONTINUAL DEVELOPMENT** and rational forms of cooperation within the faculty, between the faculties and with the University's central services. We welcome our expertise being utilised throughout the University.

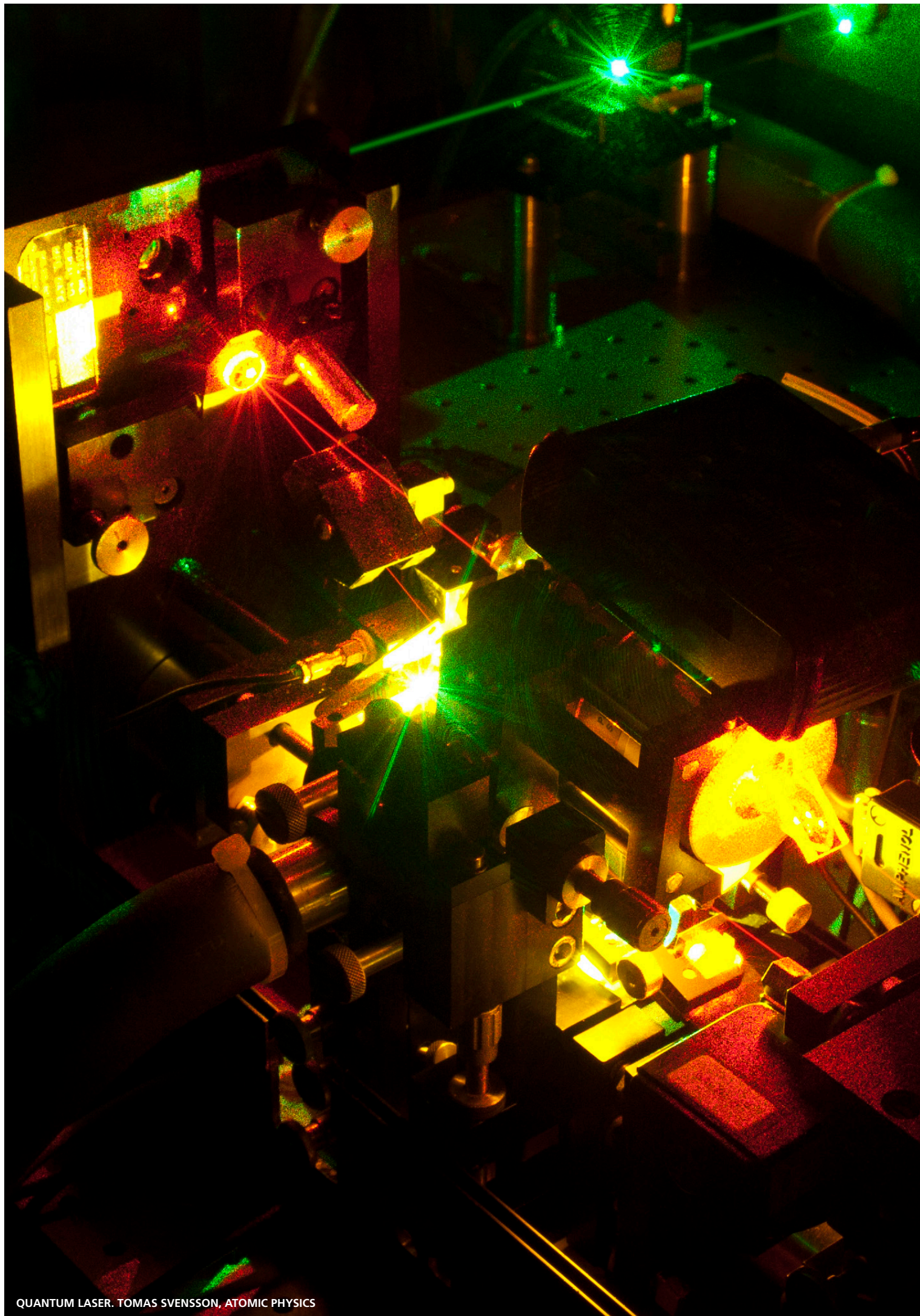
## TLTH STUDENTS' UNION

**THE TLTH STUDENTS' UNION IS NOT ONLY** a resource for students, but also an integrated part of LTH. The responsibilities of the students' union include both critical scrutiny of our activities and constructive action to develop them. Over the years, TLTH has demonstrated its ability to take responsibility and to collaborate with LTH for our students' best.



FLAME. PHOTO: HENRIK BLADH, COMBUSTION PHYSICS





QUANTUM LASER. TOMAS SVENSSON, ATOMIC PHYSICS

# Knowledge for the future

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## OUR GOALS FOR RESEARCH

- » We have cutting-edge expertise in a number of fields where research is conducted at the absolute international forefront.
- » Our research has an impact in the research community.
- » We achieve high research productivity.
- » We provide knowledge to help meet the major global challenges.
- » We have a stable scientific and artistic foundation for education in the first, second and third cycles.
- » We ensure that our academic teaching staff maintain and develop their subject knowledge.
- » We contribute to innovation in the business sector and society at large.

## OUR STRATEGY

- » Actively strengthen the external competitiveness of prioritised research environments in order to attract research funding from national and international sources.
- » Encourage cross-boundary research based on strong research expertise.
- » Utilise and develop the national and international research facilities that are planned in Lund.
- » Safeguard access to high-class infrastructure.
- » Develop the Lund University and LTH brands.
- » Highlight our research through active research communication.

## OUR PRIORITIES

- » Provide financial support for the recruitment of strategically important posts.
- » Support recruitment, activities and investments that lead to research and education at ESS and MAX IV.
- » Prioritise younger researchers through special initiatives for postdoctoral fellows with a particular focus on increasing the proportion of women.
- » Facilitate cooperation between departments and across faculty boundaries.
- » Develop use of the Internet as a communication platform with a particular focus on international target audiences.



# The researchers of tomorrow

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## OUR GOALS FOR THIRD-CYCLE EDUCATION

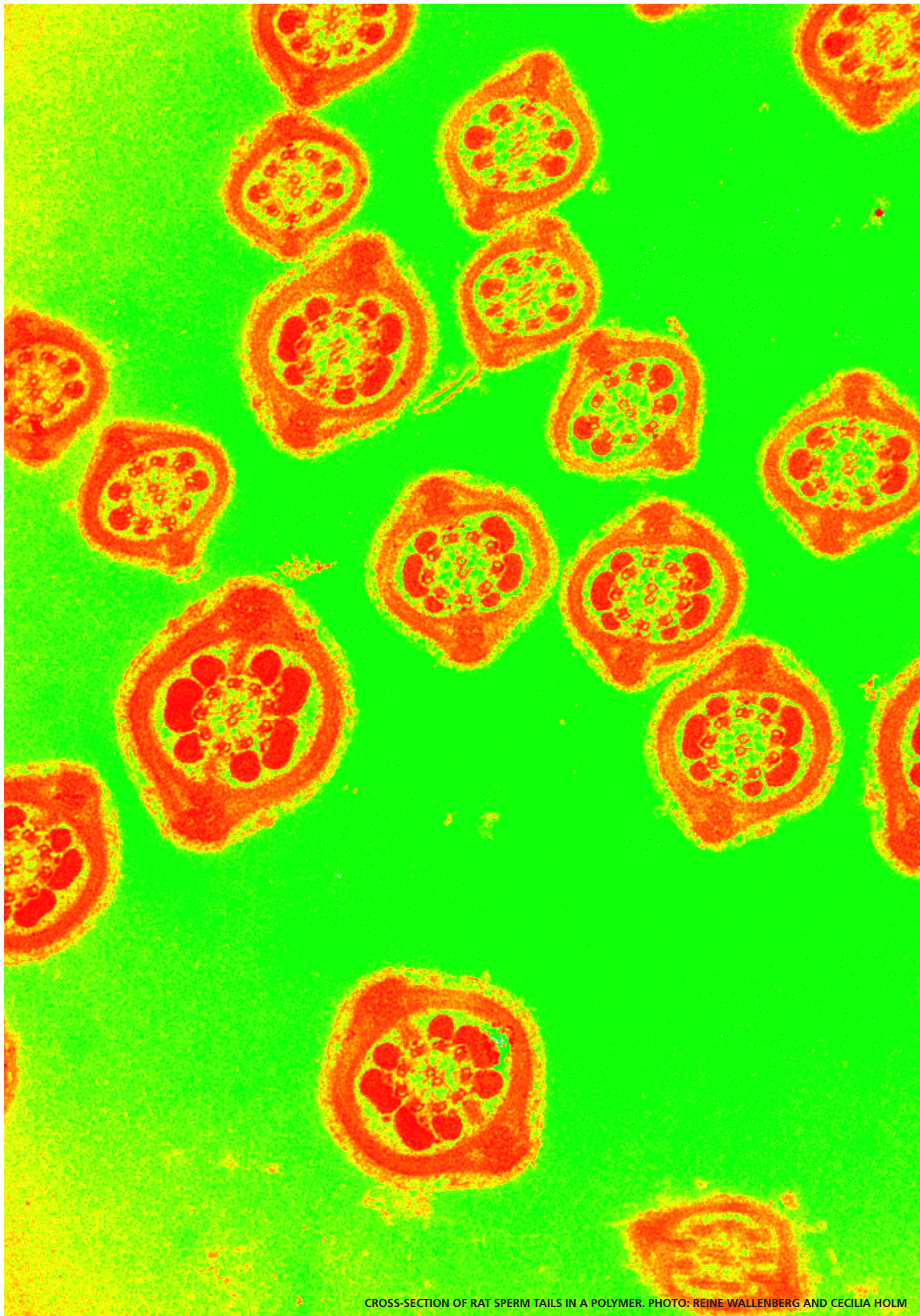
- » Our third-cycle programmes are at the forefront in their subjects and of a high international standard.
- » We have gender equality and diversity in third-cycle education.
- » Our doctoral students contribute to our research output.
- » Our PhD graduates have international experience and an international network of contacts.
- » Our PhD graduates have broad skills that lay the foundations for innovation and entrepreneurship.
- » We achieve a high rate of completion and productivity.
- » Our PhD graduates gain employment in which their third-cycle education is of use.

## OUR STRATEGY

- » Offer doctoral students education in well-financed, internationally recognised research teams with access to good infrastructure.
- » Highlight third-cycle studies and make them attractive to LTH's students and to national and international applicants.
- » Have supervisors with research and teaching expertise who are well supported in their role.
- » Integrate doctoral students into the staff community at the departments.
- » Involve doctoral students in national and international networks, exchanges and projects.
- » Involve doctoral students in teaching on first- and second-cycle courses.
- » Conduct systematic quality assurance in terms of both processes and results.

## OUR PRIORITIES

- » Introduce directors of studies for third-cycle education at the departments.
- » Establish research and third-cycle education in Engineering Education which strengthens third-cycle education in the long-term.
- » Encourage cross-boundary third-cycle education linked to MAX IV and ESS.
- » Improve financing, information and evaluation for courses in the third cycle.
- » Develop third-cycle courses in transferable skills such as project management, leadership and communicating research to the public.
- » Develop and follow up international exchange within third-cycle education.
- » Develop the careers service and alumni relations to include doctoral students.
- » Systematically follow up all third-cycle students' study and work conditions.



CROSS-SECTION OF RAT SPERM TAILS IN A POLYMER. PHOTO: REINE WALLENBERG AND CECILIA HOLM





STUDENT EXCHANGE IN RIO DE JANEIRO. PHOTO: SEBASTIAN IRMINGER, STUDENT OF CIVIL ENGINEERING

# Students and learning

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## OUR GOALS FOR FIRST- AND SECOND-CYCLE EDUCATION

- » Our programmes and courses meet the current and future demands of students and employers.
- » Our programmes and courses are research-based and of high international standard.
- » We have a functional and attractive physical and psycho-social work and study environment.
- » Our teaching staff are highly skilled teachers.
- » Our programmes and courses are the most attractive in the country in their category.
- » We have gender equality and diversity on all programmes and courses.
- » We achieve a high rate of retention and completion.
- » Students gain relevant international skills and experience during their studies.

## OUR STRATEGY

- » Profile LTH nationally with professional programmes and internationally with professional Master's programmes.
- » Offer cross-boundary education in order to create unique qualities and reach many target groups.
- » Have a vibrant campus with meeting places, modern teaching premises and good access to study areas.
- » Develop and market Lund as an attractive student environment.
- » Communicate a fair picture of LTH's programmes and courses and thus help to ensure that the students who are admitted have the right prerequisites and motivation.
- » Offer newly admitted students a good and well-adapted social and academic induction that strengthens students' ability to take responsibility for their studies.
- » Design teaching activities from a learning perspective.
- » Deliver high-class training and development in higher education teaching and learning.
- » Have a clear system of career progression for teaching staff.
- » Work actively with internationalisation on all levels.
- » Have systematic quality assurance which forms an integrated whole from course to faculty level.

## OUR PRIORITIES

- » Continue the modernisation of the Lund campus.
- » Develop a student portal for the whole of LTH and improve ICT support.
- » Create the possibility to undertake a Bachelor's degree project as part of the engineering programmes (MSc).
- » Further develop induction through active cooperation and shared responsibility between study counsellors, careers advisers, teaching staff and students.
- » Expand SI activities with a focus on higher retention and completion rates.
- » Develop study guidance and careers advice, work placement services and international guidance into a whole for the students.
- » Increase the participation of the study programmes in internationalisation.
- » Improve the integration of international students.
- » Establish research and third-cycle education in Engineering Education which strengthens first- and second-cycle education in the long term.
- » Reinforce the systematic follow-up of the results of programmes and courses.



# Engagement and partnerships

## OUR GOALS FOR THIRD-STREAM ACTIVITIES

- » We are an important and long-term partner for the business sector and wider society.
- » Our activities give rise to innovations.
- » Broad groups in society show interest in our research results.
- » Secondary school children receive direct and inspiring contact with LTH while at school.
- » Employers have good knowledge of our programmes and our graduates' skills.
- » All graduates become actively involved in LTH's alumni relations activities.
- » LTH is a strong brand among the target groups.

## OUR STRATEGY

- » Have a conscious and consistent branding strategy.
- » Promote engineering and design as positive forces in the development of society.
- » Involve alumni and representatives of the business sector, organisations and wider society in LTH's activities.
- » Provide training and professional development for the business sector, organisations and managers and teachers in schools.
- » Encourage students and staff to divide their time between LTH and external employers.
- » Spread information about research findings outside the research community and participate in the public debate on current issues.
- » Have an attractive science centre that is accessible to primary and secondary schools.
- » Focus particularly on under-represented groups in work on recruitment.
- » Maintain a presence in the places where young people are, both physically and virtually, in order to identify trends in the education needs of young people at an early stage.
- » Maintain an up-to-date, active and interactive alumni network.
- » Maintain a "win-win" perspective in the design of all forms of collaboration.



**OUR PRIORITIES**

- » Use the Internet to help alumni, the business sector and society to find the expertise they want at LTH.
- » Develop reward systems for engagement and innovation.
- » Increase the volume of commissioned education.
- » Increase the number of adjunct professors and industry-employed doctoral students.
- » Increase contact with politicians and other decision makers at all levels
- » Increase LTH's representation in management bodies of research funding organisations and in partnership organisations.
- » Participate in the application for the right to award degrees in secondary education in technical subjects.
- » Expand SI activities in schools outside LTH's traditional recruitment areas.
- » Encourage greater use of short- and long-term work placements in our study programmes.
- » Further develop alumni activities within study programmes so that students get involved while they are still studying.



# About the LTH strategic plan

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The LTH strategic plan has been drawn up over a long period of time and all employees have had the opportunity to submit comments and suggestions. In this way, we hope that most of the strategic plan will already be familiar to many and that everyone will have a sense of ownership from the start. The plan describes us as part of Lund University and in it we have made clear LTH's added value, core values, goals and vision, laid out in the following manner:

- » General goals – Improving our world and the human condition
- » Vision, mission and core values – Diversity is our strength – excellence is a product of breadth
- » Our present position and future potential – 50 years of quality and renewal
- » Management, organisation, administration and student participation – Visibility, openness, clarity and participation
- » Goals, strategies and priorities for our main areas of operation
  - Research – Knowledge for the future
  - Third-cycle education – The researchers of tomorrow
  - First- and second-cycle education – Students and learning
  - Engagement with business and society – Engagement and partnerships