

Guiding principles TU/e Atlas Living Lab

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By the TU/e Intelligent Lighting Institute

Why the Atlas Living Lab?

Research and development of intelligent technologies and services for health, wellbeing and sustainability is an integral part of the TU/e and European research agenda. To tackle the challenges in these fields, researchers increasingly look into intelligent and networked technologies that are embedded in our built environment. Everyday life already shows a significant application of such technologies, with increasing impact on our lives and the environment. The long-term patterns of use and the effects on people, for example on health, wellbeing, social interaction and energy use, can only be researched meaningfully in the real, live world. A traditional lab environment cannot capture all the relevant complexities and long-term effects. To advance in these areas, a Living Lab environment is needed. The Atlas building offers a unique environment for research, with its large scale, its focus on sustainability, its place in the TU/e community, and its intelligent lighting infrastructure.

Research in Living Labs

Living Labs are recognised in academic literature for their broad and inclusive collaboration between knowledge institutes, companies, professionals, societal organisations and citizens. In Living Labs the participants search together for solutions to complex societal challenges. While in more classic research labs experiments are done in a closed environment, in Living Labs they take place in the (semi-)public space. This means that people, consciously or unconsciously, are part of the experiment. Experimenting asks for openness, change and flexibility in rules and agreements. But experimenting is not a priori positive and neutral: people may benefit from or be disadvantaged by the experiments. The Rathenau Institute recently stressed the importance of ethical rules for responsible experimenting in Living Labs. This is especially important in situations where people do not really have a free choice to participate in experiments.

Ambition

The goal is to make the Atlas Living Lab into a best practice for indoor Living Labs, that respects the interests of its residents and offers researchers and students new possibilities to tackle their research and development challenges. Results of the work in this Atlas Living Lab should contribute to making the Atlas Building and other office buildings safer, more comfortable, healthier and more energy-efficient.

Guiding principles

The Atlas Living Lab is new in its set-up and scale. Although we prepare the use of the Living Lab meticulously, we realise that we cannot get everything right in the beginning and that we need to keep learning and developing as we go. Therefore, we postulate our guiding principles here, so that all people involved can see where the Living Lab is coming from and where it is heading.

- Respect for building residents: A living lab is by definition a space that is lived by people who need to work or study and do not have the primary purpose to participate in experiments. The rights of these people go before the wishes of researchers at all times. For us, respecting the users of the building means asking for permission to do experiments, being clear about ongoing and planned activities and data gathering, being approachable and taking criticism and feedback into account in policy.
- Respecting the codes of conduct: All activities in the Atlas Living Lab should meet the legal and ethical requirements as stated in the following documents: The General Data Protection Regulation (EU law 2018), [The Netherlands Code of Conduct for Research Integrity](#) (2018) and the TU/e [Code of Scientific Conduct](#)
- A clear approval process: An experiment or other data gathering is only possible after approval of a research proposal. This proposal includes details of location, time-period, participants, ethical considerations and a Data Management Plan. Evaluation of proposals is done by the TU/e ethical committee. Gaining the necessary informed consent from people as stated in the aforementioned codes of conduct is required for approval. When relevant, technical and safety checks are also part of the approval process.
- The ethical committee uses the following basic principles in its judgements:
 - Avoidance of exploitation;
 - Just distribution of benefits and burden;

- Respect for persons:
 - Participants are treated as autonomous agents;
 - Participants with diminished autonomy are entitled to protection;
- Respect for human dignity;
- Scientific validity;
- Scientific, social and/or educational relevance;
- Respect for rights and specific interests of (specific groups of) research participants, and/or the community/society”

(From: *Advies ethische toetsingscommissie mensgebonden onderzoek*, d.d. October 19th 2017)

- **Accessibility:** Any party at TU/e can apply to do research. External parties are allowed to apply in case they have a relation with TU/e and the proposed project fits in the Atlas Living Lab goals. An approval process will follow in which the TU/e ethical committee weighs the impact on the residents to the relevance of the proposed research case by case.
- **Limitation of exposure:** Experiments or data gathering are always limited in time and used areas of the building. Only data that is needed for specific research projects, approved by the ethical committee, will be gathered.
- **Security of sensitive data:** Data from experiments may contain personal data. Professional technical and organizational measures are taken to protect the data from unwanted access. Access to data is only granted after a formal evaluation by an ethical committee that weighs the stakes of the research and the rights of and burdens on the residents. Before data leaves the system, it will be reduced to the lowest necessary level of detail. Only non-personal data is considered publishable.
- **Opt-out possibilities:** Part of the approval process is a check by the ethical committee whether required informed consent is provided. So, before an experiment can be conducted there is an opt-out or opt-in possibility for the relevant people. Additionally, ‘experiment-free’ zone will be created during each experiment, preferably on the same floor, so that individual people can choose not to be in it for the duration of the experiment.
- **Consultation of residents:** A committee or other representation of residents is consulted before influential decisions about the Living Lab are made. An example of such a decision is the structural addition of new kinds of sensors or actuators to the infrastructure.
- **Feedback of results:** Results of the research will be shared with the residents.

If you have questions, feel free to contact us via atlaslivinglab@tue.nl