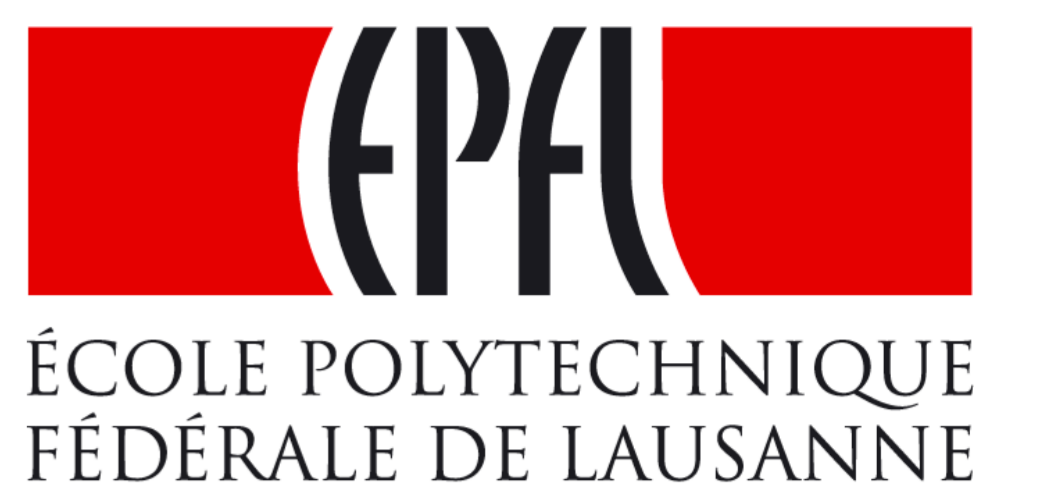


Electronics Laboratory

ELab

An Open Environment for Human-Building Interaction

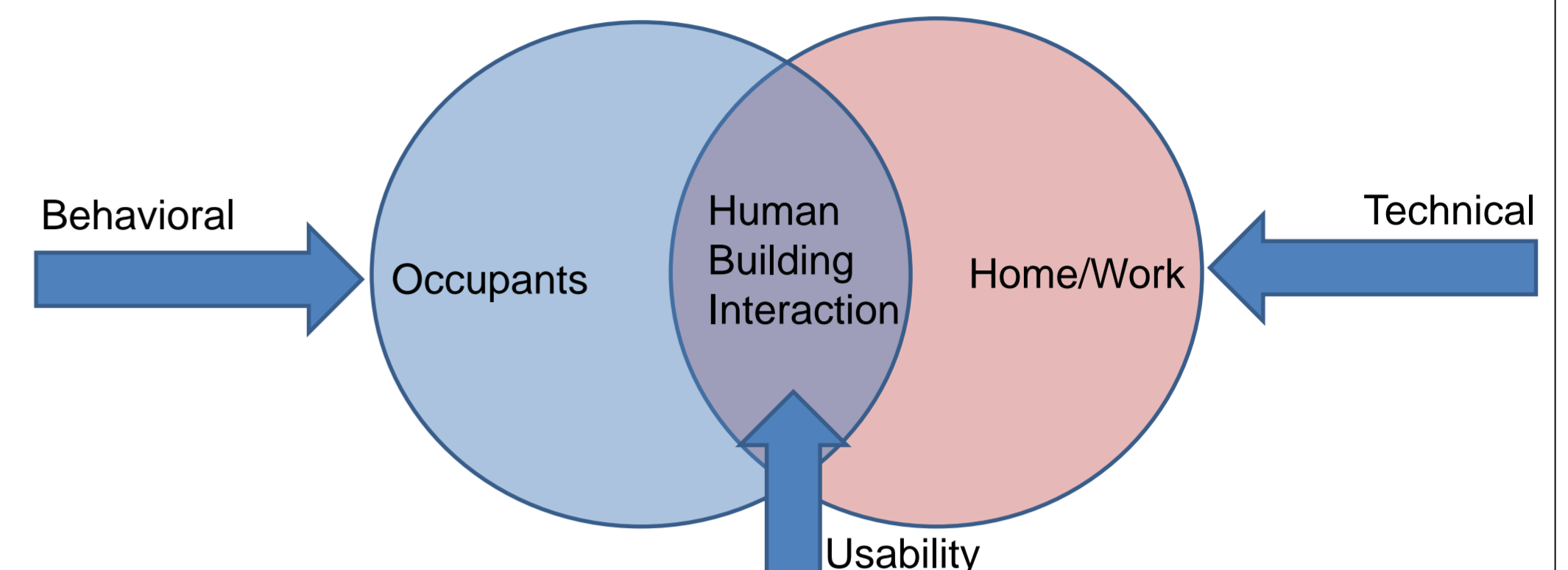
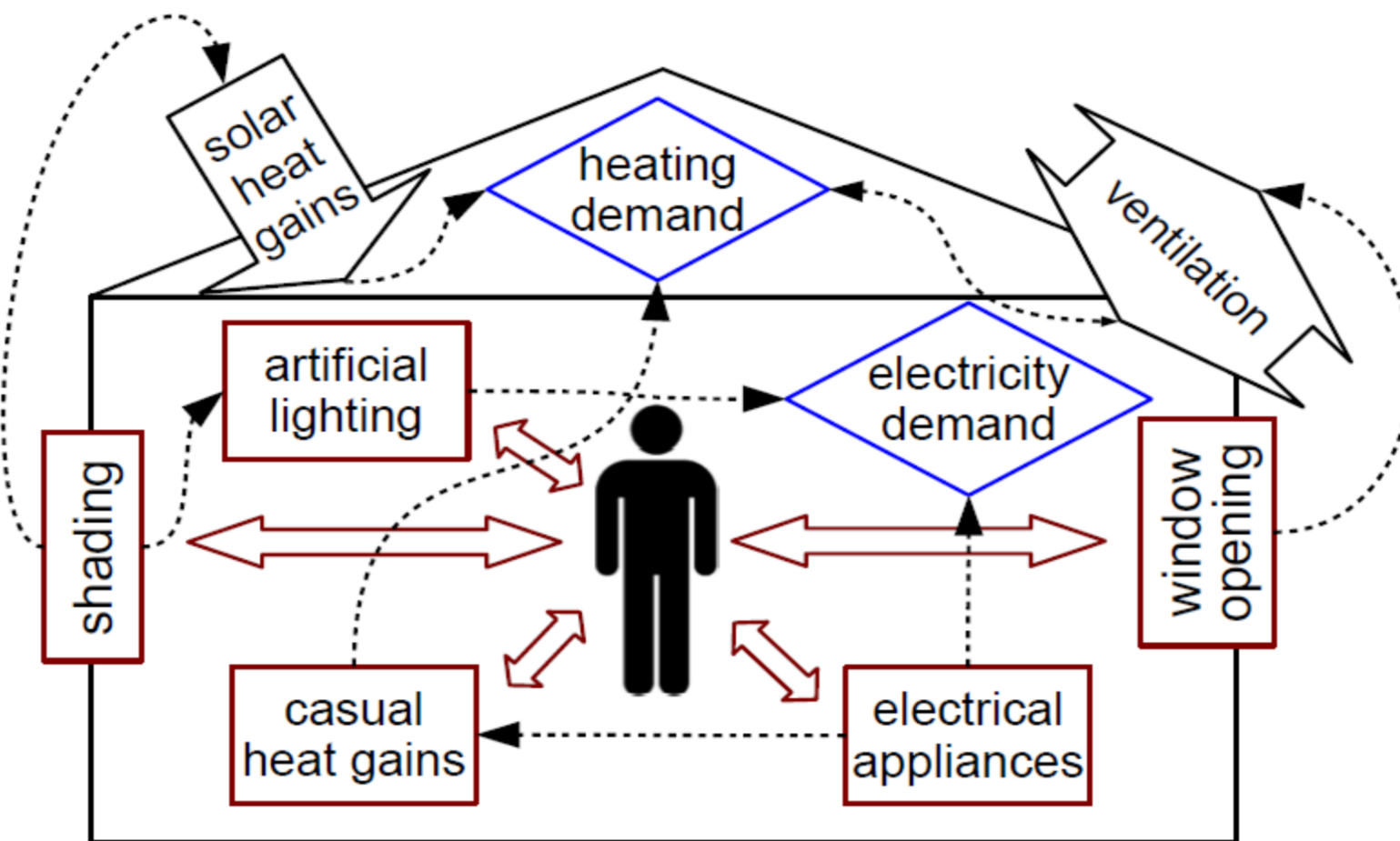


Nastaran Asadi Zanjani, Gilbert Conus, Georgios Lilis, Maher Kayal

Elab – Electronics Laboratory, EPFL – École Polytechnique Fédérale de Lausanne

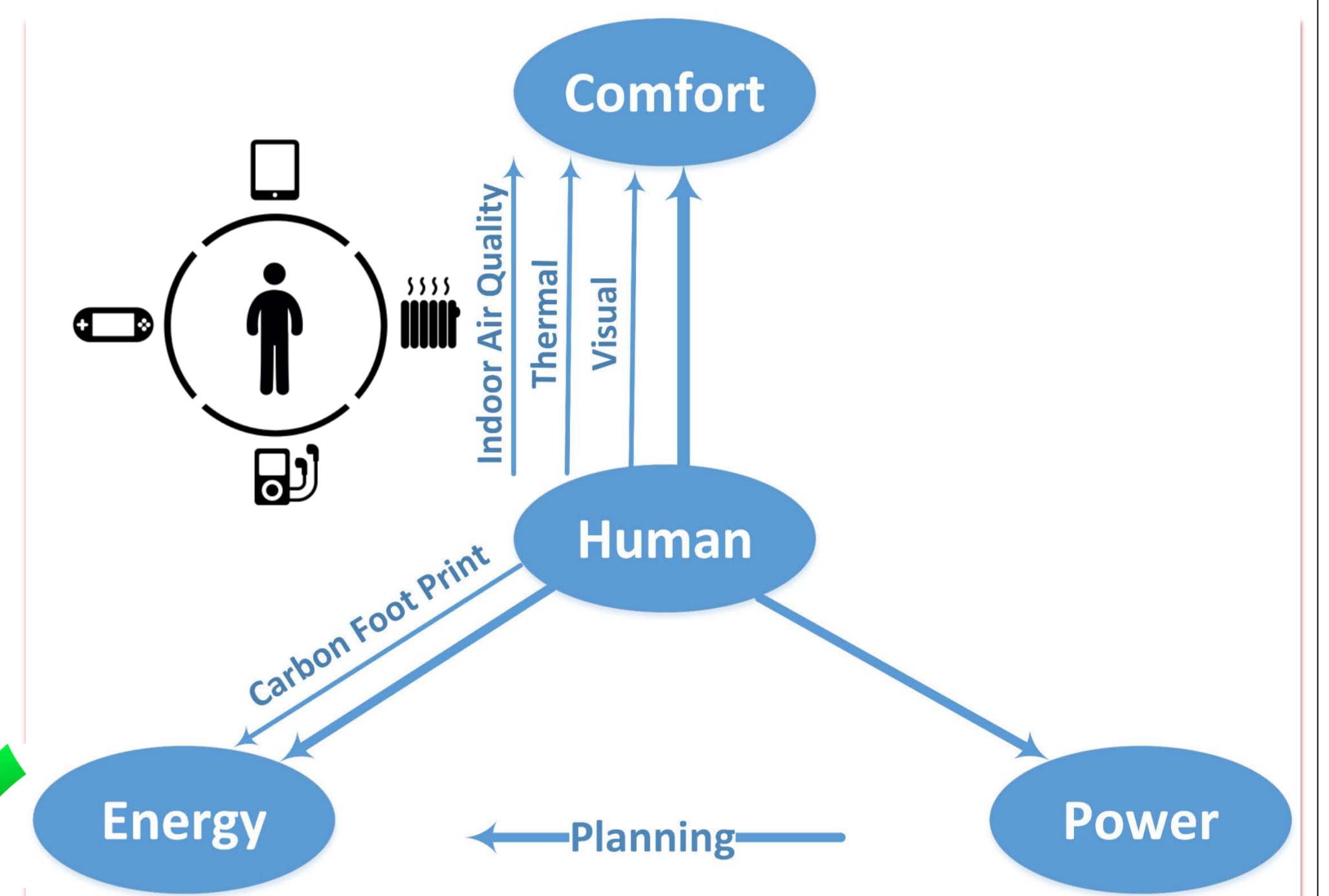
Anthropocentric Approach

- Involve occupants in building energy management towards demand side management.
- Label them in terms of energy consumption.
- Come up with normalized Human-Building Interaction interface.



Motivation Strategies:

- Motivate people to pay attention for changing their energy related behaviors.
- Create an open social energy network for future smart cities.
- Save Money ❌
- Save The Planet ❌
- Be a Good Citizen (Avoid Blackout) ❌
- Your Friends are doing better! ✅



Potentials:

- Possibility of extension to different types of loads.
- Possibility of extension to various living spaces in different buildings.
- Possibility to accept user's contributions & development.
- Dynamic, Evolutionary and Personalized system.
- Integration of power measurement sensors.
- Possibility to accept demands from Smart Grid.
- Integration of Governmental energy policies.

Features:

- Easy to use.
- Interactivity and entertainment aspects.
- Personal and global contributions.
- Daily, monthly, quarterly, yearly consumption.
- Categorized consumption based on living spaces and type.
- Comparison according to occupants category.
- Comparison among friends and co-habitants.

Technical Information :

- Web Application development using Django framework
- Up to date sever Gunicorn
- MariaDB (Mysql) as database

Software Package Modules:

- Sign up/ Log in for everyone.
- Ownership of Loads.
- Living Spaces Managers.
- Calculation of Consumption.
- Sharing and Comparison.
- Security and Safety.
- Global and Individual Remarks.

Human Vs. Grid

