Requirements

The requirements are marked with F for functional, Q for quality and R for restrictive.

The requirements have been given an id with following format:

[*Type*][Super requirement number]−[*Number*]*,* eg. F1-01 is the first sub-functional requirement from the first major requirement.

Lastly, the status column specifies the status of the requirement. If an requirement has been   implemented it is showed as *I.* If the requirement is in progress it is noted as *IP*, and if the requirement is pending, the priority of that requirement is noted using MoSCoW.

Requirement number	Description	Status
F1	**The system must enable listing of all buildings in the system** It should be possible to list all buildings in a list.	*I*
F1-01	**It should be possible to filter the list** The system should provide means for filtering the list of buildings. It should be possible to order buildings based on parameters name, category etc.	*W*
F1-02	**The system must implement a search functionality** The system must implement a functionality for searching for a specific building.	*I*
F2	**Viewing a building and its information**	*I*
F2-01a	**The system must show the actual energy consumption** The system must provide the means necessary for viewing a chosen buildings consumption without any manipulation of the data.	*I*
F2-01b	**The energy consumption must be viewed in a reasonable interval** The raw consumption must be displayed in a approximated weekly interval and it should be possible to change this interval.	*I*
F2-02	**The system must provide a list of summary statistics for a building.** When viewing a building the system should provide a summary of statistical features like standby-usage, peak-load, and nightly consumption.	*I*
F2-03a	**The system must provide a visualization of the normal consumption.** The system should provide a graph showing the normal consumption patterns of a building to enable building managers	*I*

	to get a better understanding for a given building.	
F2-03b	**The consumption profile should display the distribution of different days.** When viewing a normal consumption or consumption profile the system should display the distribution of different days in that consumption profile.	*I*
F2-03c	**The consumption profile must display summarized statistics.** The system must display the same summarized statistics as in F3-01, only when viewing a consumption profile these number should only be based on this profile.	*I*
F2-04	**The system must display the seasonality of a building.** The system must have a feature enabling the user to get an overview of the seasonal impact on a building.	*I*
F2-05	**The system must display general information about a building.** When viewing a building the system must display its BBR-information.	*I*
F2-06a	**It must be possible to validate and update general information.** Building managers should be enabled to, through the system, to validate and/or update information about the building.	*I*
F2-06b	**Display of last validation.** The system must enable the building managers to view when the building was last validated or inspected.	*I*
F2-07a	**The system must display other buildings with similar consumption.** When displaying a building, the system must display other buildings in the system with a similar consumption profile in order to enhance managers understanding of a building and its consumption.	*I*
F2-07b	**Navigate to a related building.** From the view displaying a given building the system should provide the means for navigating to one of its related buildings.	*I*
F3	**Fault Detection.** The system should locate/find odd consumption which could indicate faults, defects and waste.	*I*
F3-01	**Faults must be displayed when viewing a building.** When viewing a building it must be possible to view faults detected on this building.	*I*
F3-02	**The system must provide a way for viewing all faults.**	*I*

	There must be a dedicated page for viewing all faults detected in the system in order to support the work flow of energy managers.	
F3-03	**Indication of alarms.** An alarm must have an indication of the problem cause, when the alarm was raised (found in system), which day the fault occurred (date of odd consumption pattern) and if the alarm have been handled a handled date.	*I*
F9	**Compare buildings.** The system must implement functionality for comparing multiple building.	*I*
F9-01	**Comparing based on features.** The system should enable the user to compare multiple buildings based based on a wide range of features like average-, peak-, standby-, nightly-, morning-, afternoon- and evening consumption.	*I*
F9-02	**Comparing based on type of buildings.** The system must enable the user to compare types of buildings with each other as well as compare building types with a single or more building(s).	*I*
F9-03	**Comparing based on similar buildings.** The system must implement a feature where it is possible to view one building with one or more of its related buildings.	*I*
F9-04	**Comparing based on category.** The system should categorise building based on their consumption and provide the means necessary to compare one or more buildings with the category average.	*I*
Q9-04	**Changing interval.** When comparing buildings the system must implement functionality that enables the user to adjust the interval of time in which the comparison is based.	*M*
F10	**Viewing based on consumption type.** The system must provide a way for the user to select a consumption type, and thereby only view information of this type.	*I*
F11	**Building ranking.** The system should provide some sort of ranking indicating the how large the energy consumption is compared to others. This ranking must, as best as possible, take into account factors like building size and building type, in order to generalize the ranking across different buildings and building types.	*M*
F12	**Alarm handling.**	*W*

F12-01	**Set alarms as handled.** The system should support handling of alarms. When a manager have handled an alarm either by fixing the cause of the alarm or by recognizing the alarm as false, the manager should be able to set the alarm status as handled.	*W*
F12-02	**Viewing old alarms.** The system should provide a way to view previously handled alarms both from the building and in a list of all handled alarms.	*W*
F13	**Predict and visualize predicted consumption.** The system should provide functionality to predict/estimate the consumption of a building, and in relation to this visualize it for a building.	*S*
F14	**Budgeting buildings.** The system should support the user in creation and maintenance of the budget for a given building. Further it should make use of predicted consumption to estimate or suggest numbers in budget.	*Co*
F15	**User roles.** The system should implement a way of creating new users, assigning roles and restrict unauthorized users/visitors from critical features like handling alarms and validating/updating building information.	*W* ** (not fully at least)*
F16	**Team organization.** The system should allow users to organize themselves into team.	*W*
F17	**Task assignment.** The system should allow user to assign task to each other.	*W*
R18	**Integration of system** In order to minimize maintenance, it is a requirement that the system is integrated with the existing system while the system is in the adoption phase.	*I*
Q19	**Scalability** The system must at be able to handle all buildings and their data in the municipality in a reasonable time (for the preprocessing max 2 hours). Further since all municipalities of Denmark is a possible client, and all buildings in denmark are possible data sources, the system must have a linear runtime increase, to ensure scalability.	*I*
F20	**Portability** It is a requirement that the product can be used from various devices, such as a computer and tablet. For a fully developed system the product should also be useable from a phone	*IP*