Smart Street Lamp in Community
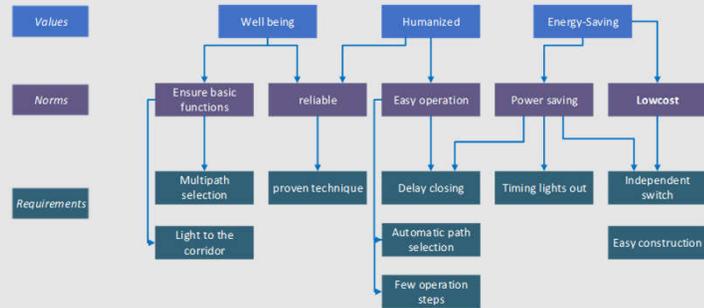
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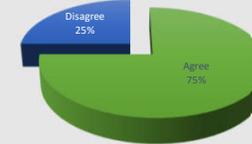
Introduction

There are some problems in community street lamps today, such as high energy consuming and the influence to citizens' sleeping. Our project proposed a new scheme, which can reduce the energy consuming. We did some fieldworks and technology analyses.
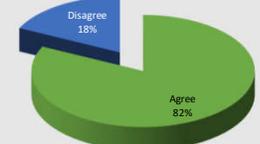

Scheme

➤ *At present, the street lamps in the community are on all night. We can turn them off at midnight.*

➤ *For those residents who come back late, after they swipe their cards to enter the community, the lamps on the way from the gate of the community to their home will be lit up. And the lamps will stay on until they swipe their cards again to enter buildings, or be lit off after a certain period of time.*

➤ *For those residents who go out late, after they swipe their cards in the buildings, the lamps on the way from the buildings to the gate of the community will be lit up. And they will stay on until they are out of the gate.*

Values	Norms	Requirements

Well being → Ensure basic functions → Multipath selection, Light to the corridor
→ reliable → proven technique
Humanized → Easy operation → Delay closing, Automatic path selection, Few operation steps
Energy-Saving → Power saving → Timing lights out
→ Lowcost → Independent switch, Easy construction

Fieldworks

某大爷：路灯很亮，我觉得不费电。我觉得挺麻烦的。
Uncle A: The street lamps are very bright. I don't think they cost much electricity. I think it may be a little bit troublesome.

某环卫工人：智能的东西都比较麻烦，小区最近装了一个智能开关，都按不开。
Cleaner B: The intelligent things are more troublesome. They recently installed an intelligent switch and I don't know how to operate it.

某年轻妈妈：关了灯睡觉会比较安静吧.
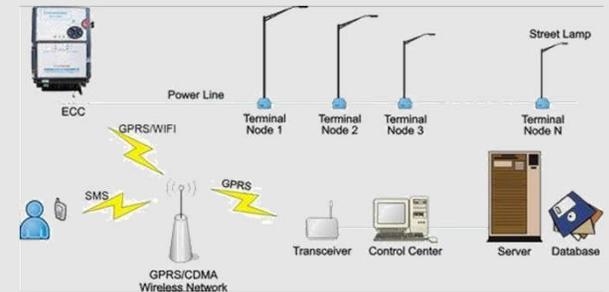*Young mother C: It will be quieter to sleep with the light off.*

某阿姨：我九点之前遛弯回家，我儿子在保险公司工作，有时候加班到十一二点。
Aunt D: I take a walk and come home before 9 o 'clock. My son works in an insurance company, sometimes work overtime to 11 or 12 o 'clock.

物业：晚上路灯是一直亮着的，路灯挺耗电的，电费成本每个月比较高
Management E: The street lamps are always on at night. The electricity cost of the street lamps is relatively high every month.

Data Statistics

	Agree	Disagree	Sum
People who go home late	3	1	4
People who go home early	23	5	28
Management	1	0	1

People who go home late

Disagree 25%
Agree 75%

People who go home early

Disagree 18%
Agree 82%

Conclusion

Smart Street Lamp in Community can save energy to some extent. And from our social research, most of residents are in favour of our scheme, which is technically feasible after we looked up for literature.

Tsinghua University