

Social impact assessment of a living wall installed in a hospital

International Conference on Living Walls and Ecosystems Services
University of Greenwich 6-8 July 2015



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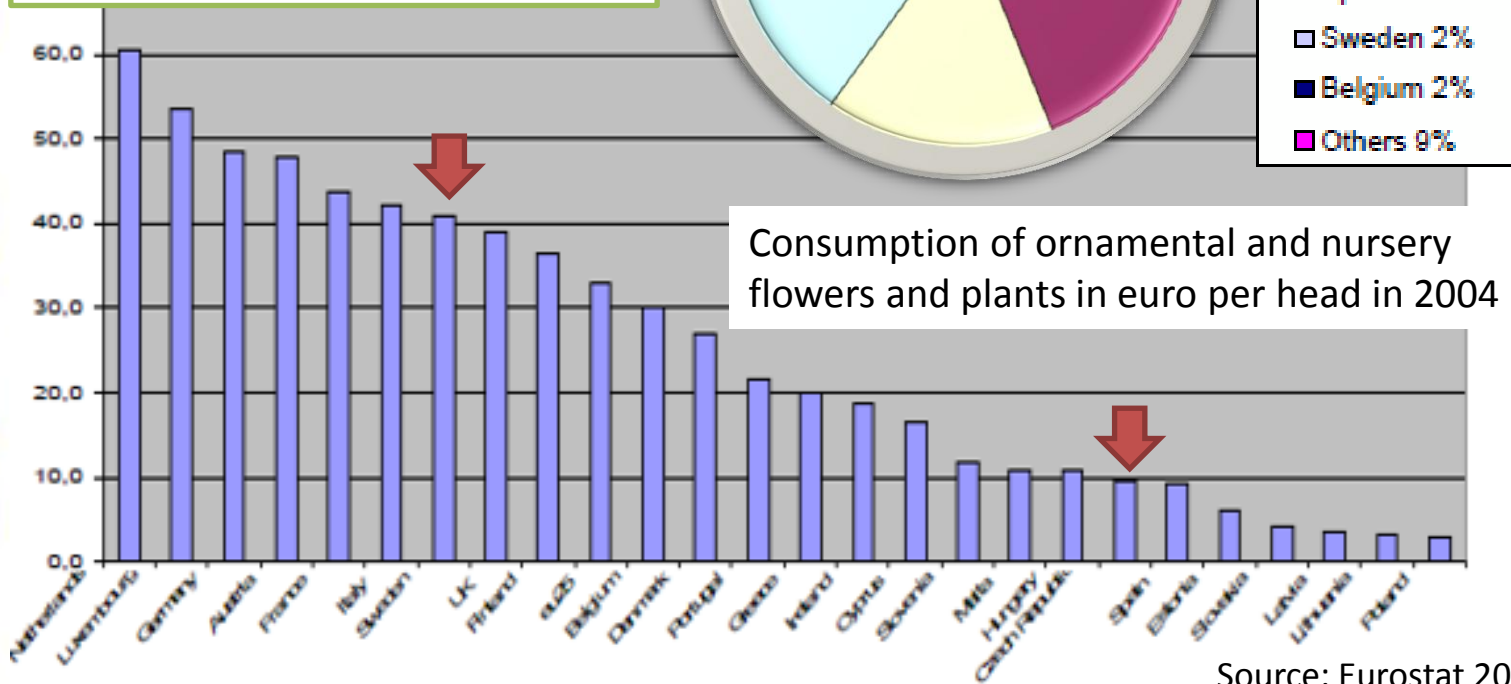
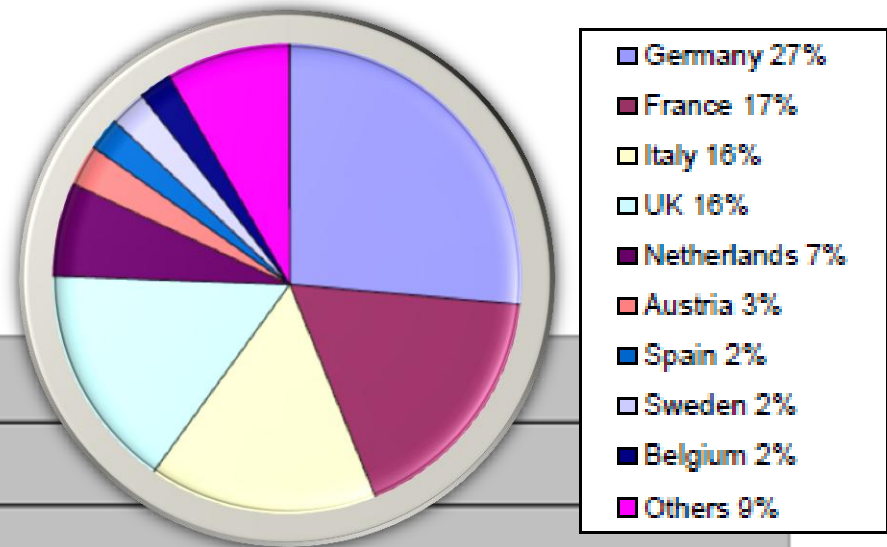
E-evaluate some of the ‘intangible benefits’:

- Media impact
- Hospital users’ attitude towards the living wall

- In general, Spanish do not value plants

Share in total EU ornamental plants consumption (2004)

UK	40 €/pp
Netherlands	60-65 €/pp
Belgium	60-65 €/pp
Germany	48 €/pp
France	43 €/pp
Spain	8 €/pp



- This relates to the number of LW installed
- Spain → much less than in UK
- Public vs. private investment



What should we tell the private sector to encourage the use of LW?

Known benefits

- Air quality improvement
- Impact on thermal performance of buildings
- Noise isolation
- Favouring biodiversity
- Aesthetic effect

ARE THEY ENOUGH?

Not so known...

Intangible benefits

- ✓ *Social impact*
- ✓ *Psychological*
- ✓ *Marketing*

Marketing



Lafayette Galleries of Jean Nouvel (Patrick Blanc, 2008)

Marketing



Advertising slogans using Living Walls

Clients attitude towards greening the space

Environmentally conscious

Branding



Clients attitude towards greening the space



Clients attitude towards greening the space



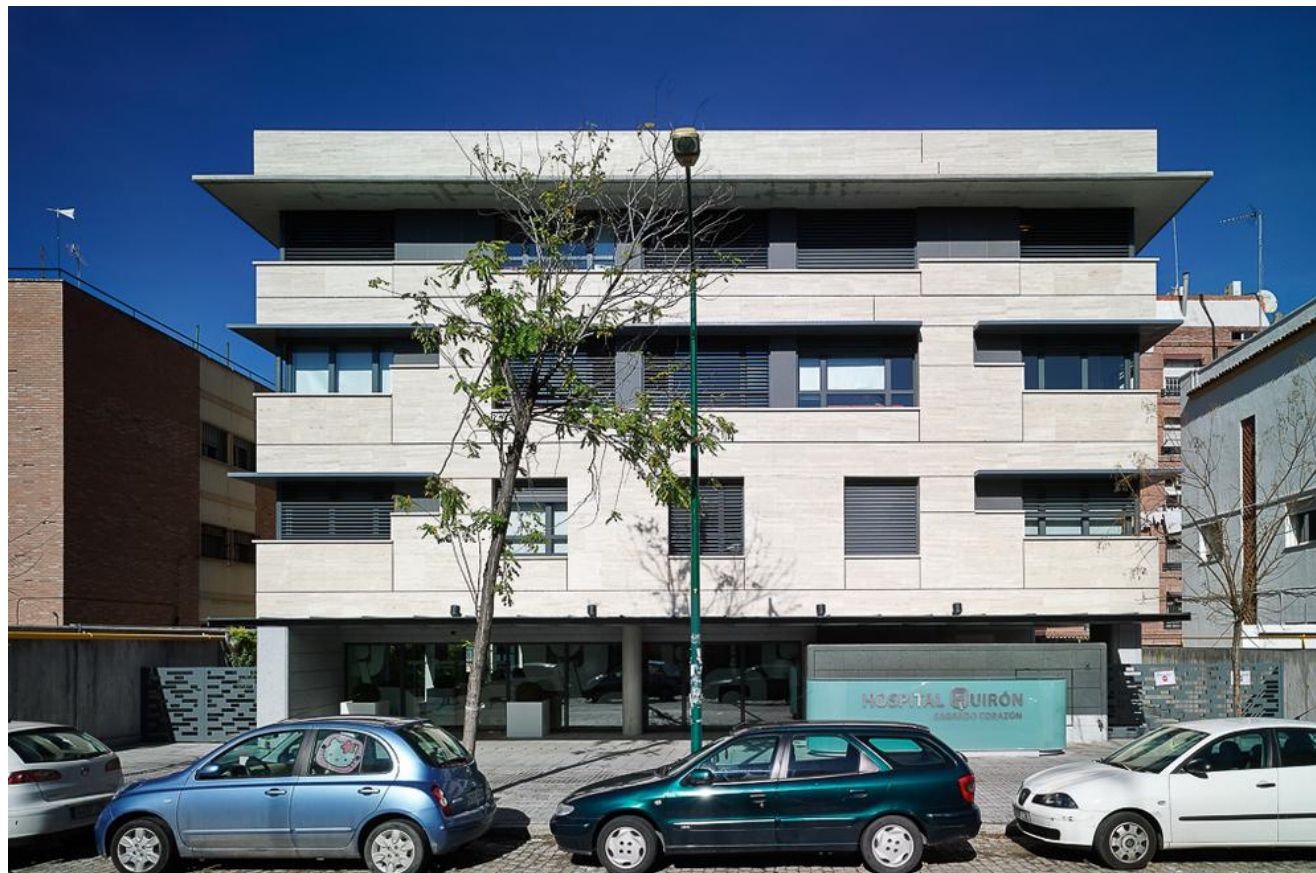
Clients attitude towards greening the space

What about a private hospital?

- ✓ Offering a view of an environmentally friendly healthcare company?
- ✓ Just introducing an aesthetically pleasant element?
- ✓ Psychological benefit from passive involvement with nature, relying on the visual amenity (Özgüner & Kendle, 2006)
- ✓ Relieve stress and pain (Vincent et al., 2010)

The case study

- **Location:** Quirón Sagrado Corazón Hospital (Seville, Spain)



The living wall

- **Design:** Inspired in Burle Marx “Suspended Garden”
 - Area: aprox. 40 m² (17 m long by 2.2 m high)
 - 1400 plants, 40 species

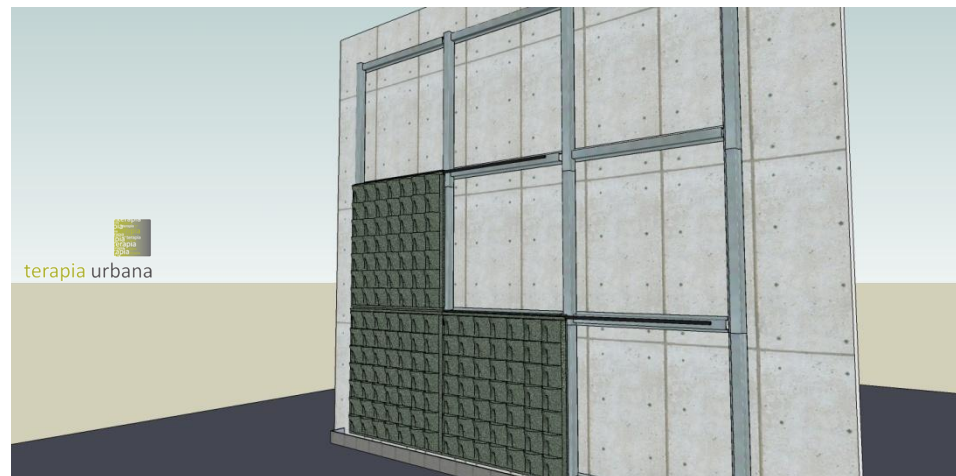
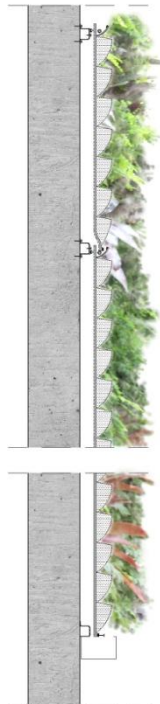


<http://www.terapiaurbana.es/>

Living wall design process: (a) adaptation of the original image to the living wall size; (b) transposition of the landscape design to planting pattern; (c) actual result

- **The living wall system**

- Fytotextil: 1 x 1 m modules of cloth (three layers) with pockets
- Plants with rootball (coconut peat) inserted in pockets



- Installation process



- The result





Methodology

- **Media coverage (2012-2015):**

- Appearances in newspapers
- Radio and television
- Internet: youtube, facebook, blogs

- ❖ Valuation based on:

- Target audience
- Length of the article, video, interview...
- Media importance (national wide, regional...)
- Official prices of advertisements

Methodology

SUR (SUPLEMENTO ESPECIAL)		26/12/12
MALAGA		
Prensa:	Otra	
Tirada:	37.885 Ejemplares	
Difusión:	31.058 Ejemplares	
Cód: 6832448		
		Página: 10
Sección: OTROS Valor: 5.116,00 € Área (cm2): 914,0 Ocupación: 95,17 % Documento: 1/2 Autor: BLANCA SALVATIERRA Núm. Lectores: 133000		



Uno de los productos patentados por investigadores de la Universidad de Sevilla. TEDAPIA URBANA

La construcción de la ciudad avanza

didas a Terapia Urbana son el corazón de la empresa.

Los investigadores Rafael Fernández, Luis Pérez y Antonio Franco, que trabajaron para desarrollar esas patentes en el mundo académico, son los que las explotan comercialmente junto a otros socios.

trato convencional sino una especie de tela combinada en varias capas.

La idea es, por un lado, aprovechar espacios hasta a hora baldíos y, por otro, facilitar en gran medida que los jardines estén bien cuidados con una mínima intervención humana. A partir de cierto tamaño,

«El principal beneficio es el espacio: no es necesario tener terreno»

«Ahora tenemos

Methodology

- **Users' perception:**

- ❖ **350** questionnaires to hospital personnel and visitors

- Face-to-face interviews during May-June 2015
- 22 questions



Methodology

- **Users' perception:**

- ❖ **350** questionnaires to hospital personnel and visitors

- Descriptors (age, gender, occupation, etc.)
- General questions about attitude towards plants and green spaces
- Specific questions about the LW and its effect on the survey respondents
- 'Contingent valuation' questions: willingness to pay, how much should the hospital invest on the LW?

Results

• Media impact analysis

- 30 appearances in 23 newspapers
- Radio: 2 interviews
- Television: 3 reports in a regional channel and 1 in national TV (accumulating more than 10 minutes)
- Youtube: more than 4200 viewers
- Facebook: 373 likes, 256 shares
- 407 tweets

RECOVERED **5.2** TIMES
THE INVESTMENT

❖ Estimation of the investment in the LW:

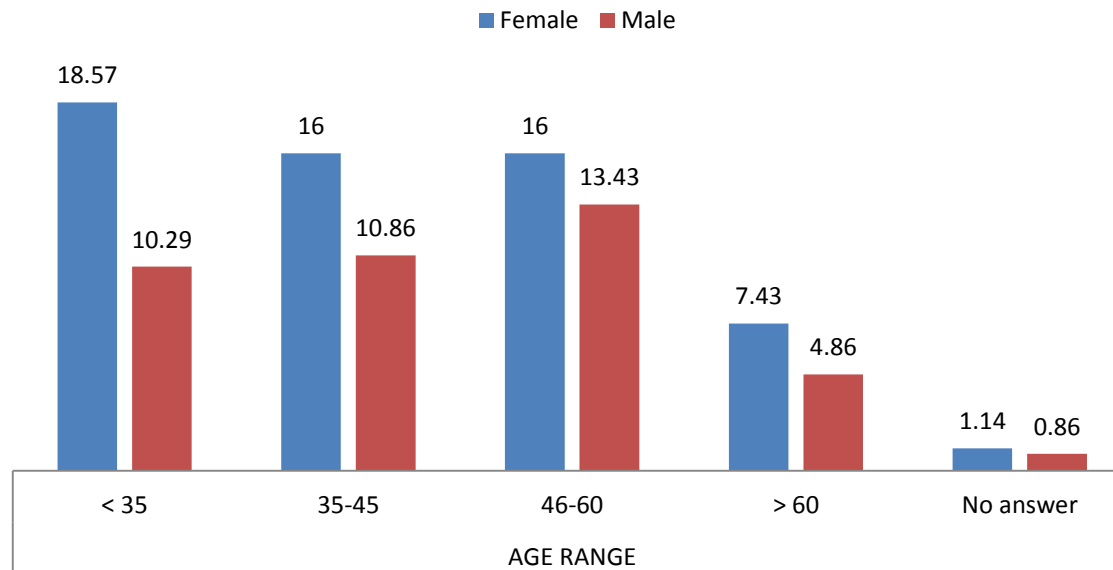
- Installation costs
- Operation & maintenance costs during 15 years

Results

- **Users' perception: the sample**

Distribution of the 350 questionnaires:

Gender and age

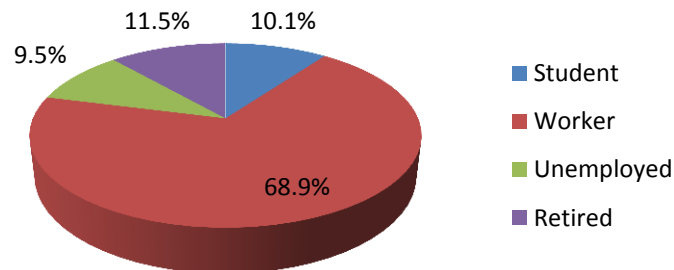


Results

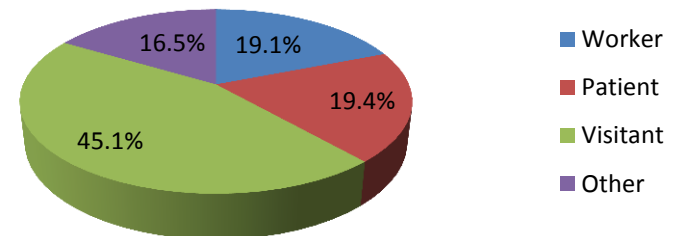
• Users' perception: the sample

Distribution of the 350 questionnaires:

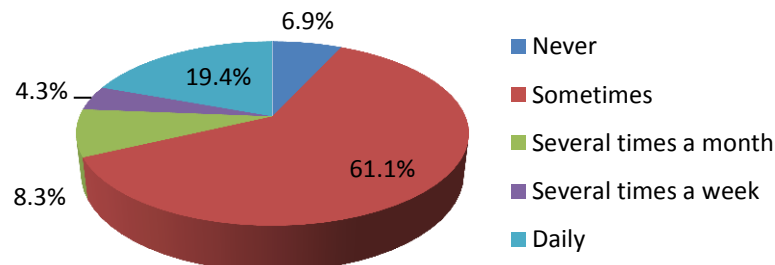
Occupation



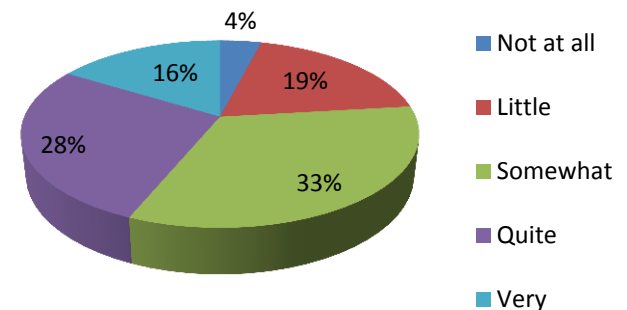
Type of user



Frecuency of visiting the hospital

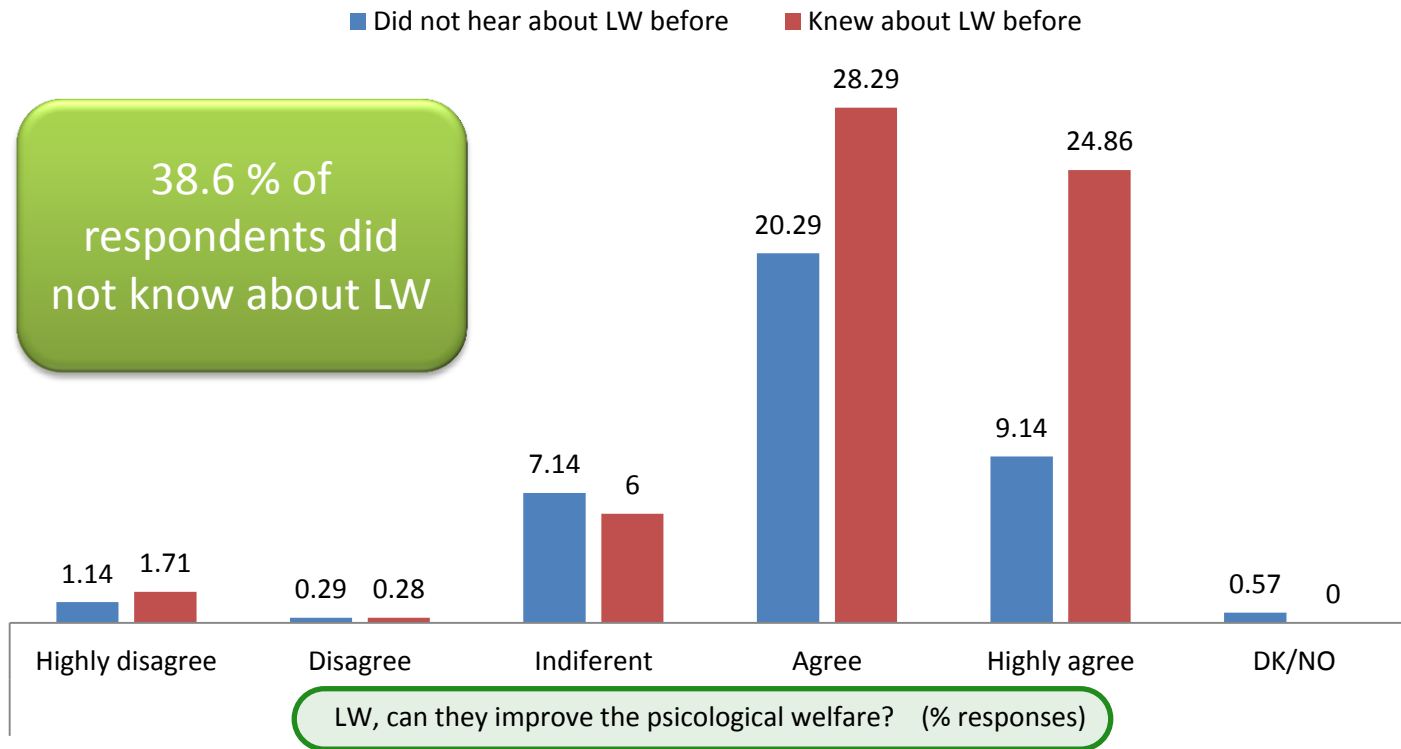


Interested in gardening



Results

• Users' perception: the outcomes

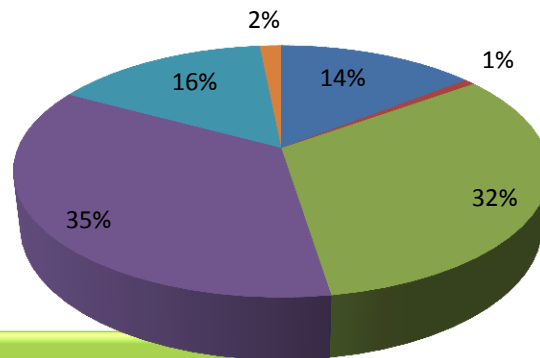


Results

• Users' perception: the outcomes

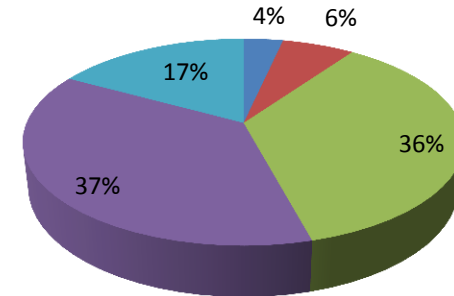
Emotions or reactions inspired being near plants

■ Allergy ■ Filth ■ Welfare ■ Serenity ■ Happiness ■ None



83.4 showed positive reactions

LW may have a therapeutic effect contributing to improve health



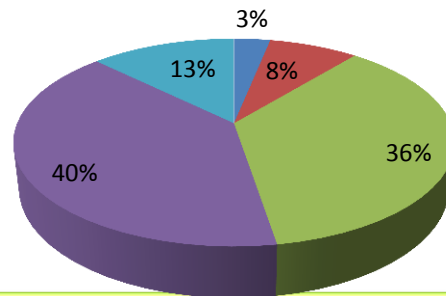
■ Highly disagree ■ Disagree ■ Indiferent ■ Agree ■ Highly agree

Results

• Users' perception: the outcomes

LW have the same effects over those than perceive it than conventional gardens

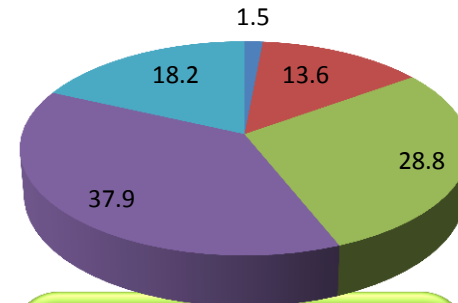
■ Highly disagree ■ Disagree ■ Indiferent ■ Agree ■ Highly agree



53 % of respondents think a LW have an equivalent effect to conventional gardens

Do you value the presence of plants in your working place?

■ Not at all
 ■ Not so much
 ■ Something
 ■ Quite
 ■ Very much

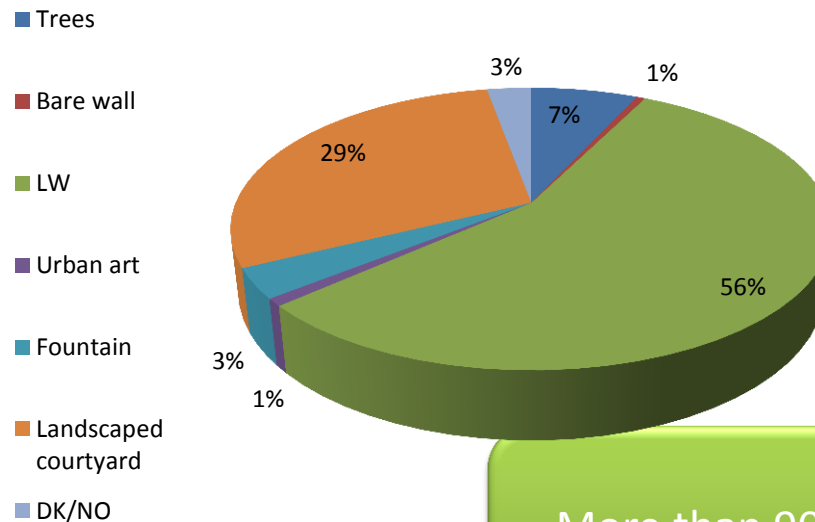


More than 50 % of hospital workers quite value the presence of plants

Results

- **Users' perception: the outcomes**

What would you like to view from the hospital's hall?



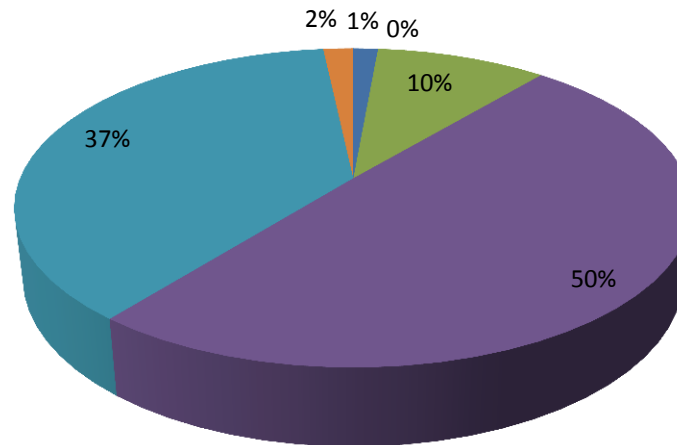
More than 90 % of respondents would use vegetation

Results

- **Users' perception: the outcomes**

**It is adequate to invest on constructing a LW
at the hospital**

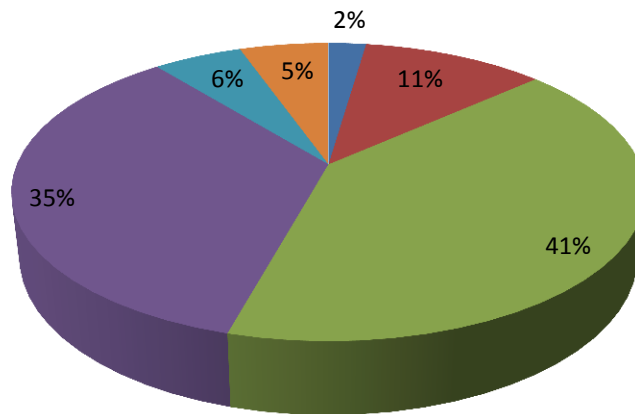
■ Highly disagree ■ Disagree ■ Indiferent ■ Agree ■ Highly agree ■ DK/NO



Results

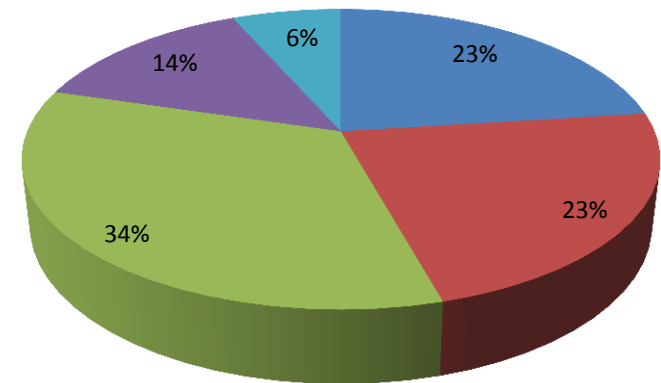
- **Users' perception: the outcomes**

How much should the hospital annually spend on LW and plants?



■ Nothing	■ 0-100 €
■ 100-1000 €	■ 1000-10.000 €
■ More than 10.000 €	■ DK/NO

How much would you be eager to pay monthly to increase/improve green areas close to you?



■ Nothing	■ 1 €	■ 5 €	■ 10 €	■ >10€
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Conclusions

1. Generally, people think there should be investments on green areas but they are not willing to pay for it.
2. Although not much importance is given to gardening, plants provide positive feelings and reactions and they are appreciated in different environments such as a hospital.
3. Many people have not heard about living walls before, but when they see one, their reaction seems to be positive.

Conclusions

4. Most of the hospital users think that having a living wall there is psychologically beneficial and contributes to improve health. Therefore they totally agree with the investment made by the hospital.
5. Most hospital users prefer to have a living wall in the hospital over other options (green or not)
6. High cost recovery ratio (investment vs. returns in publicity) **BUT** no such impact is expected for every LW installation → in this case the media impact was significant but the novelty of the news and the wide diffusion played an important role.

Acknowledgements:



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Thank you for your attention



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