



**SOLAR DECATHLON
EUROPE 2012
GENERAL DOSSIER**

Update on 5th September

ESPAÑA 2012



Solar Decathlon Europe in Madrid in September

THE VILLA SOLAR

“SHARED ENERGY IN A CITY MADE TO SCALE”

- 19 solar houses will compete to be the most efficient.
- The “Villa Solar” will be open to the public, free of charge, from 14th to 30th September.



The second edition of Solar Decathlon Europe (SDE) will be held **in Madrid from 14th to 30th September**, with the participation of **19** university **teams** from 12 countries (Germany, Brazil, China, Denmark, Egypt, Spain, France, Hungary, Italy, Japan, Portugal, and Romania). Thus this competition will be the most international edition held so far.

Once more, the teams taking part will have to **design and build a sustainable and self-sufficient house powered by solar energy alone**. These projects started being developed at their corresponding universities in 2011, with the aim of reaching the final phase of the competition, to take place between 14th and 30th September at the **Puerta de Angel concert site in Madrid’s Casa de Campo**, where participants will build their life-size houses on the site of the Villa Solar and compete against each





other for two whole weeks in order to pass the ten competition contests.

The “Villa Solar” will be **open to the public** (see schedules on the web), making it possible to visit the houses and get acquainted at first-hand with the most up-to-date technologies applied to architecture. Furthermore, visitors will have a chance to take part – also free of charge – in a **host of activities focused on renewable energies**. There will be a space devoted exclusively to children, enabling them to make close acquaintance with the advantages of a sustainable house. **(*Information about activities attached)**

The main aim of Solar Decathlon Europe is to increase understanding and raise awareness of citizens about the importance of the environment and sustainability in construction; apart from promoting sustainable development through **research and innovation** applied to efficient architecture and construction.

The second edition of Solar Decathlon Europe is organized by the **Ministry of Public Works, Madrid City Council and the Polytechnic University of Madrid (UPM)**, through the Higher Technical School of Architecture of Madrid. Its main sponsors are **Schneider Electric and Kömmerling**, and its official collaborators: **AENA, ADIF, RENFE, INECO y FEVE**. It is also supported by **The US Department of Energy** and the **IDAE**.

SDE is an official partner in the European Commission Sustainable Energy Europe Campaign and has recently been awarded at the *Sustainable Energy Europe Awards 2011*.

THE VILLA SOLAR

For the ten days of the competition in 2010, participating solar houses **produced three times as much energy as they consumed**. In total, **6.177 kWh** were produced, **while consumption was 2.579 kWh** and the excess energy was fed into the network so the neighbors could use it.

The Villa solar 2010 was not only a success in terms of energy production. **More than 200.000 visitors** were able to see the world’s most innovative houses in Madrid and take part in various activities related to renewable energies designed for everyone.

In 2012, a further step is being taken: the Villa Solar is turning into a city built to scale, where the energy is shared. It will also be a place for developing innovative projects in the field of power distribution.

For the first time in the history of this competition, houses will be connected to an





“**intelligent network**” or “**Smart grid**”. Apart from being self-sufficient, avoiding transport costs by generating and consuming in the same place, the energy surplus produced will be supplied to the Villa Solar, like that at an EV charging station (electrical vehicle recharging points) or event spaces. Any excess power will be fed into the public distribution network.

With the “**smart grid**”, energy produced and consumed at the Villa Solar can be managed, with specific real time data available about each area, including the twenty prototypes taking part in the competition.

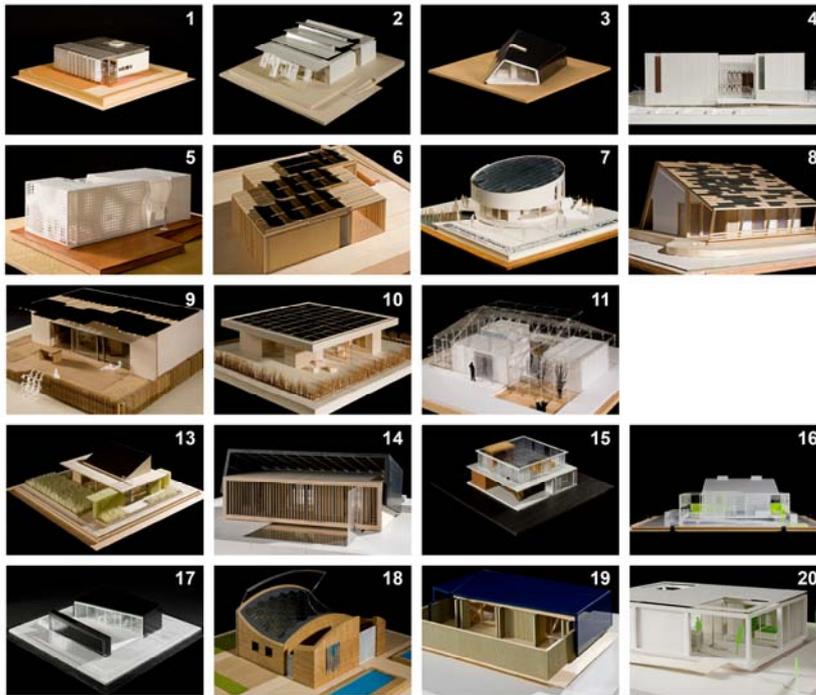
During Solar Decathlon Europe, it will be possible to visualize the Smart Grid information on three different scales. It will show how to optimize the energy of the network of the Autonomous Community of Madrid, the Villa Solar and each of the houses.

By means of intelligent networks and computer technology, production, distribution and consumption of electricity will be optimized, reaching a better balance of supply and demand.





PARTICIPATING TEAMS



sd europe
SOLAR DECATHLON

CASAS SOLARES 2012

1. Tongi Team, China
2. Aquitanie
BordeauCampus, Francia
3. Team DTU, Dinamarca
4. Andalucía Team, España
5. American University
Cairo, Egipto
6. CEU Valencia Team
España
7. Casa Pi, Universidad de
Zaragoza, España
8. Prisca, Rumania
9. EHU Team, España
10. RWTH Aachen University,
Alemania
11. (E)CO Team, España
13. Chiba University, Japón
14. CEM+NEM-, Portugal
15. Rhône Alpes, Francia
16. Team Brasil, Brasil
17. Odooproject, Hungría
18. Astonshine, Italia y
Francia
19. Team Rome, Italia
20. Ecolar, Alemania

ORGANIZERS



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COLLABORATORS





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EUROPE

Nombre del equipo	País	Universidades	Iniciales	Nombre de la casa	Web
(e)co Team	España	Universitat Politècnica de Catalunya	UPC	(e)co	http://www.solardecathlon.upc.edu/2012/
American University in Cairo	Egipto	American University in Cairo	AUC	SLIDES	http://www.slides-s.com/HomePage.aspx
Andalucía Team	España	Universidades de Sevilla, Jaén, Granada y Málaga	AND	Patio 2.12	http://www.andaluciateam.org
Aquitaine Bordeaux Campus	Francia	University Bordeaux	ARC	Sumbiosi	www.sumbiosi.com
ce+n+em-	Portugal	Universidade do Porto	FAUP	cem' casas em movimento	http://casemovement.alojamentogratico.com/
CEU Team Valencia	España	Universidad CEU Cardenal Herrera	CEU	SML system	www.uch.ceu.es/sde
Chiba University	Japón	Chiba University	CUJ	Casa Omotenashi	http://sde.chiba-u.jp/
EHU TEAM	España	Universidad del País Vasco (Euskal Herriko Unibertsitatea)	EHU	Ekhouse	www.ekhouse.org
Med in Italy	Italia	Università degli studi di Roma TRE / Sapienza	ROME	Med in Italy	http://www.medinitaly.eu/
Universidad de Zaragoza	España	Universidad de Zaragoza	UDZ	Casa PI	http://gee.unizar.es/sd2012
Odooproject	Hungría	Budapest University of Technology and Economics	BME	Odoo	www.odoproject.com
PRISPA	Rumania	"Ion Mincu" University of Architecture and Urbanism / University Politehnica of Bucharest / Technical University of Civil Engineering of Bucharest	BUC	PRISPA	www.prispa.org
Rhône-Alpes	Francia	École Nationale Supérieure d'Architecture de Grenoble	TRA	Alpes Project	www.solardecathlon.fr
RWTH Aachen University	Alemania	RWTH Aachen University	RWTH	Counter Entropy House	http://solar.arch.rwth-aachen.de/
Team Brasil	Brasil	Universidade Federal de Santa Catarina / Universidade de São Paulo	BRA	Ekó House	http://www.ekobrasil.org
Team DTU	Dinamarca	Technical University of Denmark	DTU	Team DTU	http://www.solardecathlon.dk
Tongji Team	China	Tongji University	TJU	Style Box	http://solardecathlon2012.tongji.edu.cn
École National Supérieure d'Architecture Paris-Malaquais / University of Applied Sciences Konstanz	Francia - Italia Alemania	École Nationale Supérieure d'Architecture Paris-Malaquais / University of Ferrara University of Applied Sciences Konstanz	PMFE HTWG	A Stony Shine Lake Constance Solar Home	http://astonyshine.com/ http://www.sde2012.htwg-konstanz.de/



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COMPETITION: THE 10 CONTESTS

Teams will arrive in Madrid on 3rd September, and will have 10 days to build their houses, in the construction phase. On Friday, 14th September, the competition will begin and each house will undergo 10 tests to determine the winner of the competition: **the one which consumes the least natural resources and produces minimum waste in its lifetime.** The total number of points gained in the ten contests, up to a maximum of 1000 points, will determine the winner of each edition.

1. Architecture _____ 120 points ___ Jury
2. Engineering and Construction ___ 80 points ___ Jury
3. Energy Efficiency _____ 100 points ___ Jury
4. Electrical Energy Balance _ 120 points ___ Measurement
5. Comfort Conditions ___ 120 points ___ Measurement
6. Appliances and Functioning ___ 120 points ___ Measurement
7. Communication and Social Awareness _ 80 points ___ Jury
8. Industrialization and Market Viability __ 80 points ___ Jury
9. Innovation _____ 80 points ___ Jury
10. Sustainability _____ 100 points ___ Jury

*More details about each contest at http://www.sdeurope.org/?page_id=6627





This **evaluation is carried out in three ways**: by tasks completed, by measurement in situ (objective evaluation) and judgment by jury (subjective evaluation):

1. Points for Tasks Completed

Teams will receive points for successfully completing a task or getting as close as possible to doing so.

2. Points from Measurements in situ

During the competition, the houses will be monitored constantly, with spot measurements of additional parameters. Points will be awarded according to how close certain variables approximate to the target set for a given contest.

3. Points awarded by juries

Expert juries will award points according to evaluation criteria and guides established by the Organization.





BACKGROUND INFORMATION

SDE originates from the US DOE Solar Decathlon competition, created by the US Department of Energy in 1999.

The first edition of this competition was held on the National Mall in Washington DC in the autumn of 2002 <http://www.solardecathlon.gov/>.



As a result of the **Polytechnic University of Madrid's** participation in the 2005, 2007 and 2009 editions, the Spanish Government signed a bilateral agreement with the United States in order to be able to hold the competition outside the USA for the first time in June 2010, under the name of Solar Decathlon Europe <http://www.sdeurope.org/>.

A similar agreement has recently been signed for the presentation of **Solar Decathlon China**. In this way, the European edition is held in even years and the North American in odd ones. **As from 2013**, SD China will be held a few months after the US DOE Solar Decathlon. http://www.solardecathlon.gov/sd_china.html / <http://www.sdchina.org/>.

Finally, the governments of France and the U.S. signed on 21 th of March the adherence protocol by which our neighbouring country will host the third European Edition of Solar Decathlon Europe in 2014. The French Minister of Housing, Benoit Apparu, and the U.S. Ambassador in France, Charles H. Rivkin, were responsible for signing the adherence protocol by the European competition by which it will be





continued changing the stage from Madrid to Versailles, Paris. <http://www.solardecathlon2014.fr/>.

All three competitions have a common base and common objectives, but are organized independently and may differ in their regulations and tests, adapting themselves in this way to their own circumstances and context.



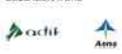
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MATERIAL:

- Visiting guides to the Villa Solar. Information about each team:
<http://bit.ly/TNfeGU>
- Selection of the best photos from Solar Decathlon Europe 2012:
<http://www.flickr.com/photos/sdeurope/sets/72157631433458846/>
- Videos of Solar Decathlon Europe 2012:
<https://vimeo.com/album/2073562>
- Videos made of Solar Decathlon Europe 2012:
<https://vimeo.com/album/2073558>
- Map of the Villa Solar:
<http://bit.ly/OrK1Id>
- Press releases from the teams:
<http://bit.ly/TNg5HR>

Web: www.sdeurope.org

Facebook: <https://www.facebook.com/sdeurope>

Twitter: @SDEurope

Blog: <http://blog.sdeurope.org/>

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