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Annex 1. Identification of risks and evaluation of the efficiency of the adopted protections

Annex 2. Identification of risks for possible later works

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1. Health and safety checklist

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Description of works	N° page: 23
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Procedures to adapt collective Protection	N° page: 9/ annex 1 and 2

2. Health and Safety Plan Precedents and Aim

The VIA-UJI équipe has been made the health and safety plan for the construction of éBRICK house, the house developed by our team to participate in the Solar Decathlon Europe 2014 contest.

This Safety and Health Plan is established in compliance with rule 52 of the Solar Decathlon Europe 2014 and with articles L 4532-8 and R 4532-42 to R 4532-51 du code du travail

This plan covers the stages of production, assembly and dismantling test at the place of production, transport from Castellon to Versailles , assembly, exhibition, maintenance, dismantling and transport from Versailles to Castellon

Our aim is to ensure the full safety of all members of the team including workers and any visitors to the site before, during, or after the processes.

The team must count with experienced workers who are aware of their responsibilities, doing the planning, making constructive decisions, and coordinating each and every participating member. Inspector from the administration must perform supervisions of the works being carried out.

As a part of the SDE 2014 Organization the team will designate the SDE HS Area which consists of:

HS Coordinator: is the team member in charge of all the Area and Director of all the works. She is the Health and Safety Coordinator of La Cité du Soleil during the construction, in compliance with French Regulations. This person is responsible for health and Safety of the whole Team: including every operation of each of the team members. This includes: students, faculties, contracted staff, etc.

HS Inspectors: is a person of the team who's helping HS Coordinator with the Health and Safety activities: checking out deliverables, realizing inspections during the construction, etc. During the HS Coordinator's absences, HS Inspectors have the same authority.

HS Observers: at last, as a complementary preventive measure, during the construction, the HS Area is supported by observers, which will inform of any incident taking place to the HS Coordinator. They may not give any type of orders to the teams.

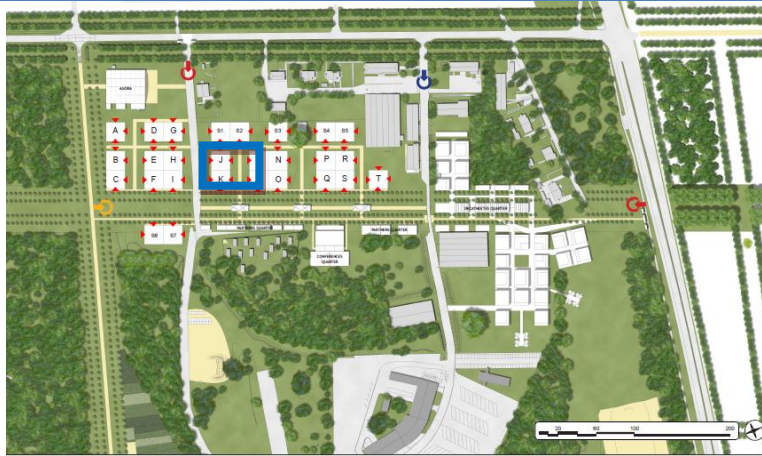
The members of the SDE HS Area will be in constant contact with the SDE HS Coordinator. In case the works involve serious and imminent risks, the HS Coordinators or HS Inspectors will have the power to stop the works, as stated in the French law for the Prevention of Labor Risks.

3. General data of the project

	Names of stakeholders	Addresses	Telephone	Fax	Name of Manager
<i>Project Ownership</i>	SDE 2014	cours Louis Lumière 94 300 Vincennes - France	00.33.(0)1.40.50.29 34	00.33.(0)1.40.50.29 10	M. MAT erome.mat@solardecathlon2014.fr
<i>SPS Design Coordinator</i>	BUREAU VERITAS	17A, avenue Robert Schuman 13235 Marseille Cedex 2	00.33.(0)4.96.17.13.50	00.33.(0)4.91.56.18.73	C. PEYRONEL christophe.peyronel@fr.bureauveritas.com
<i>SPS Realisation Coordinator</i>	BUREAU VERITAS	2 Boulevard Vauban - 78180 Montigny le Bretonneux			Non-designated
<i>Project Supervisor Site development and restoration</i>	Non-designated				

Event Promoter	SDE organization
Project promoter	VIA-UJI équipe
Project	Assembly, maintenance and disassembly of the prototype éBRICK house for the competition Solar Decathlon Europe 2014
Site Operations Coordinator	David Fernández-Camuñas Gallego
Site Operations Coordinator Contact	<ul style="list-style-type: none"> e-mail: al235358@uji.es Phone number: 679525290
HS team coordinator during design	Rosa Prades
HS team coordinator during construction.	Rosa Prades
HS team coordinator Contact	<ul style="list-style-type: none"> e-mail: al106044@alumail.uji.es Phone number: 635048245
Type of construction:	Prefabricated housing
Name and address of SDE 2014	CITE DU SOLEIL 2014 Domaine du château de Versailles Allée des Matelots

	VERSAILLES, FRANCE
Period of construction:	From Friday June 27th to Monday July 14th 2014



équipe VIA UJI is not among the competitors but is on the reserve list. We will present our éBRICKhouse prototype on lot S3, located to the north of the Solar Village besides a tree and the right another prototype.

4. Health and Safety plan Objectives.

The health and safety plan studies the risks involved in the activities related to the exhibition of the project in all its phases – starting from the transportation of elements, to assembly, exhibition and disassembly. It is done to establish safety measures in order to minimize the risk of accidents and ensure a healthy environment for all the team members as well as visitors. The document also specifies the actions to be taken in the case of emergency.

These documents try to recall the general principles of prevention complying with the articles L4121-1 and L4121-2 from du Code Du Travail:

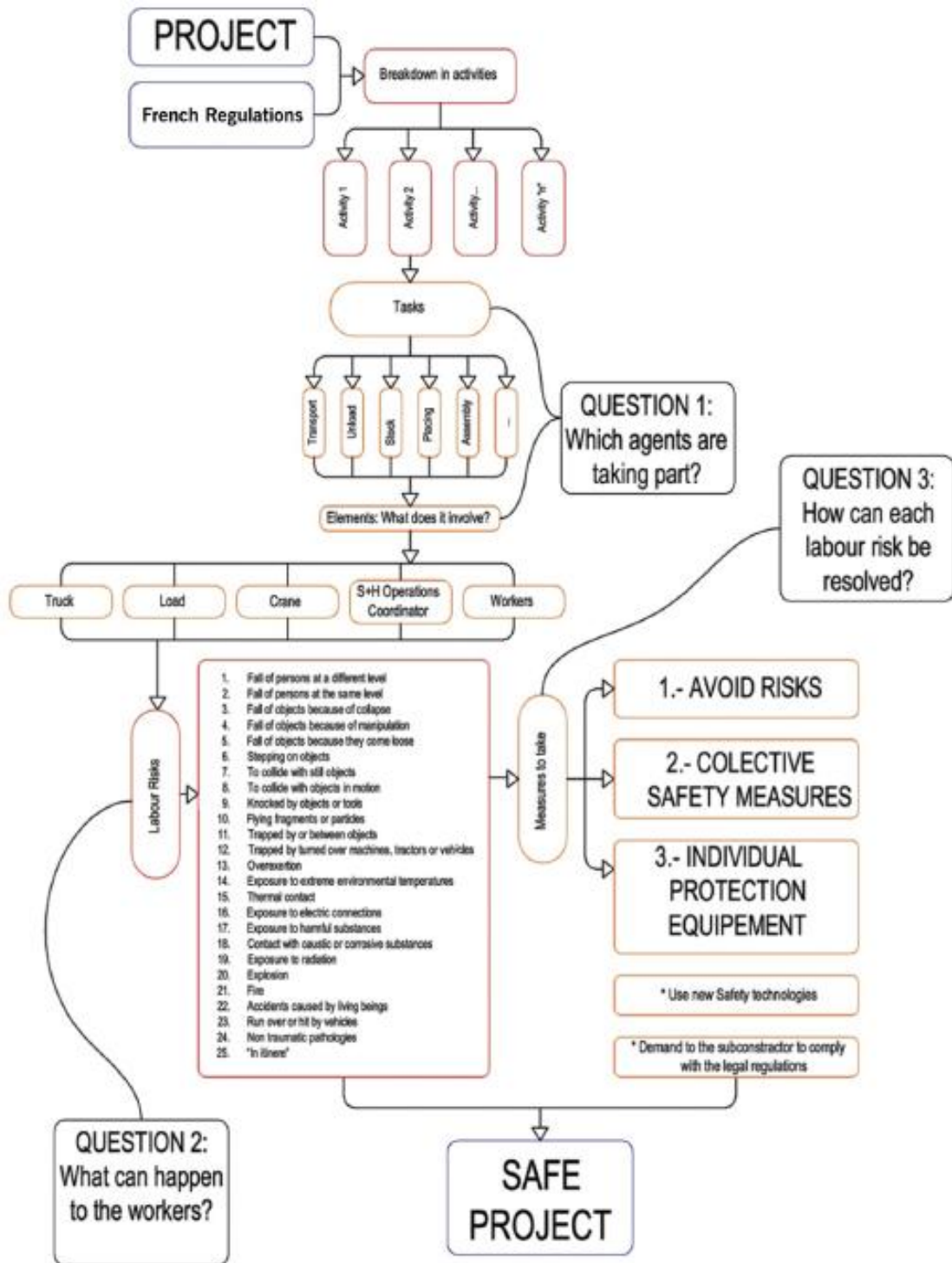
- The avoidance of risks.
- The evaluation of unavoidable risk.
- The combating of risks at source
- The adaptation of work to the individual, especially as regards the design of places of work, the choice of work equipment and the choice of systems of work, with a view, in particular, to alleviating monotonous work and work at a predetermined work rate and to reducing the effect of this work on health.
- The adaptation of the place of works to technical progress
- The replacement of dangerous articles, substances or systems of work by safe or less dangerous articles, substances or systems of work.
- The giving of priority to collective protective measures over individual protective measures.

- The development of an adequate prevention policy in relation to safety, health and welfare at work, which takes account of technology, organization of work, working conditions, social factors and the influence of factors related to the working environment.
- The giving of appropriate training and instructions to employees.

The aim of this document consists in resolving every risk before starting works; in order to avoid risks during construction, minimizing improvisation and not planned actions, the aim of this document also consists in guiding the team /members' actions; by knowing at every single moment how they have to develop the constructive process in a safe way.

The HS Plan is a reference document of mandatory compliance for all the team members.

This HS Plan is based in the next procedure:



5. Conditions of the site where construction will take place

5.1. Constructive process

The éBRICK house is going to be built first in Castellón (Spain) from its individual components that are compact, consistent and transportable from structural, engineering and electrical. These can be easily assembled and dismantled also by the team members later in Versailles.

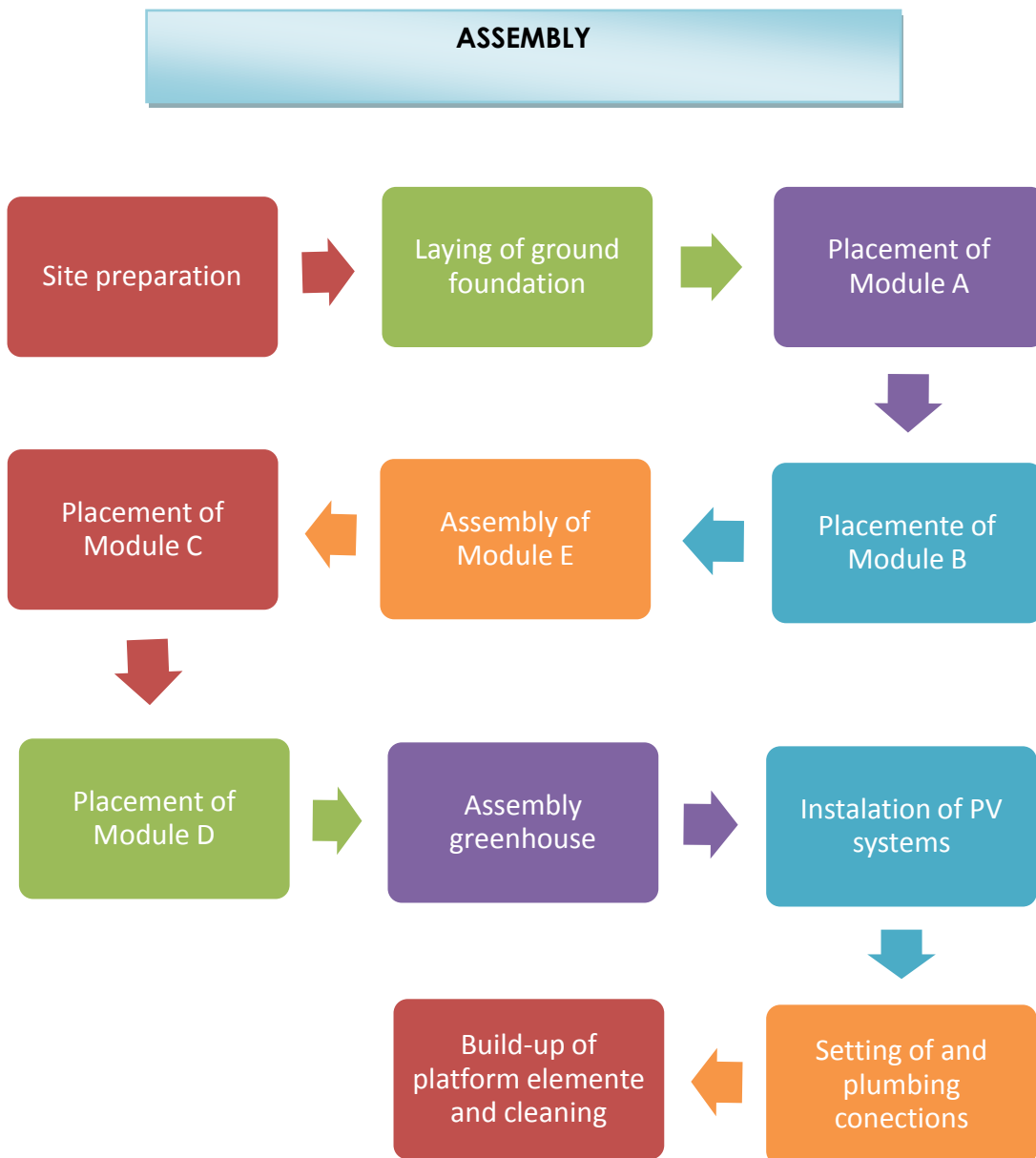
éBRICK house would be composed of 6 principals elements which will be brought in three trucks. Constructive process consists on assemble all these parts together in a previously determined order.

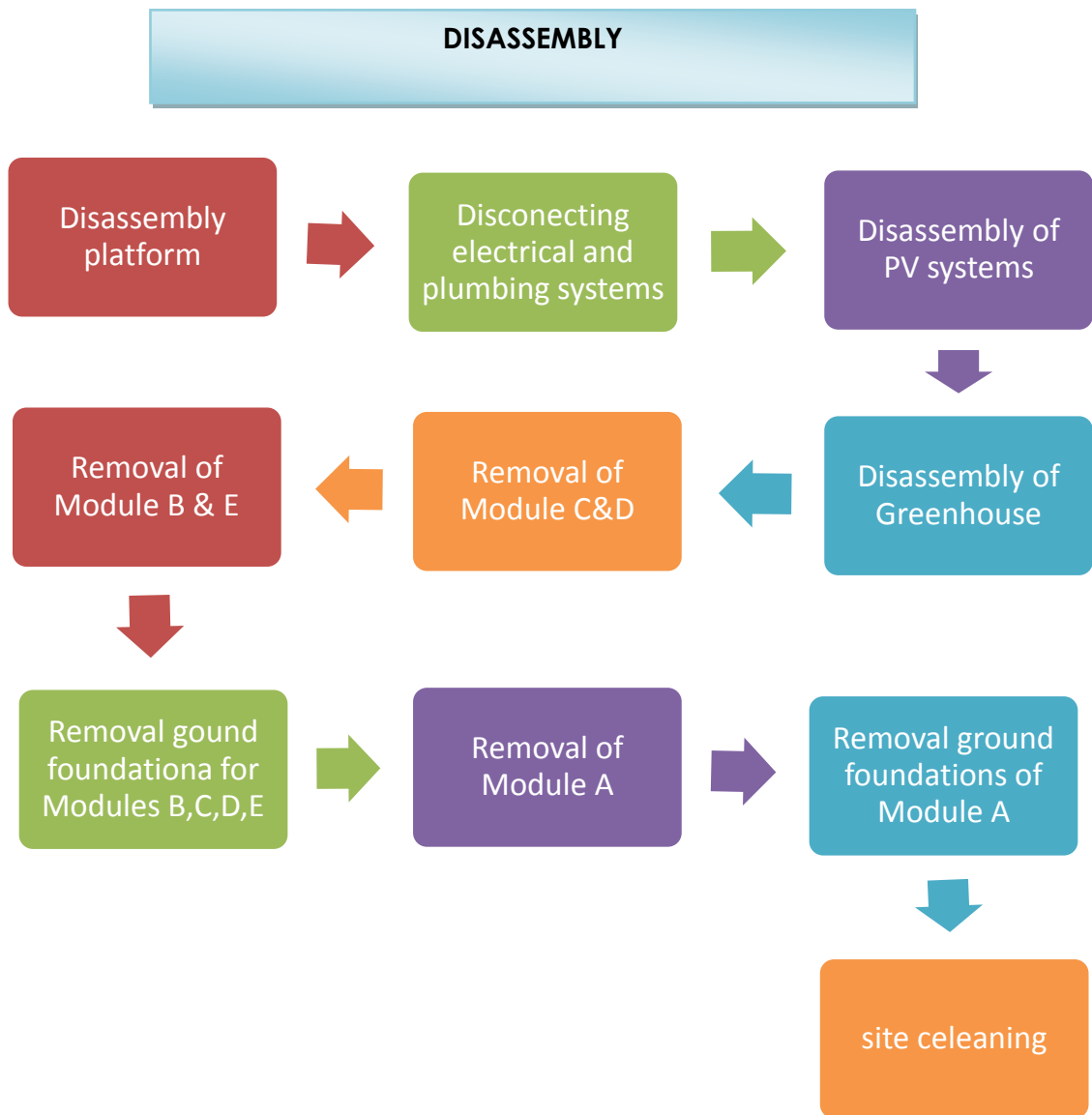
The major part will be directly assembled after the trucks unloading. Other parts and batches of parts would be stocked in assigned areas (furniture, appliances...).

Our prototype is actually made out of different elements prefabricated so once on the site where the construction will take place; the first thing to do is to assemble all different parts that constitute éBrick.

In fact, our prototype is composed by 6 elements which constitute the house's envelope (Module A, Module B, Module C, Module D, Module E and the greenhouse). As we see just before, we have, at first, to assembly all this elements:

In the constructive process, we assembly these elements in a precise order:





5.2. Type and characteristics of the materials and elements

LOCALITATION		MATERIAL	DESCRIPTION	PRESAFETY PREVENTION
Foundation	Foundatio n	Steel Adjustable footing	Dimensions 0.6-0.8m	PPE Gloves Hard Hat Work clothes
	Profile	Steel profile	Steel profile HEB 100	
Floor	Prototype	Neoprene membrane	0.005m/22m ² /0.11m ³	PPE Gloves Hard Hat Work clothes
		Wave plate		
		Steel beam	0.018m/136m ² /2.448m ³	
		Hard Insulation	0.1m	
		insulation	0.1m/68m ² /6.8m ³	
		Plywood	0.3m/68m ² /20.4m ³	
		Natural wood	0.002m/68m ² /1.36m ³	
			0.005m/68m ² /0.34m ³	
	Bathroom floor	Neoprene membrane	0.005m/4m ² /0.02m ³	PPE Gloves Hard Hat Work clothes
		Wave plate		
Steel beam		0.018m/16m ² /0.228m ³		
Insulation		0.1m		
Hard insulation		0.3m/4m ² /1.2m ³		
Plywood		0.1m/4m ² /0.4m ³		
Plot	Plastic(butech)	0.02m/4m ² /0.08m ³	PPE Gloves Hard Hat Work clothes	
		0.011m/4m ² /0.044m ³		
	Steel footing Pvc plastic Wheatherproof phenolic board			
Roof	Duoble skin	Hard insulation	0.2m/76m ² /15.2m ³	PPE Gloves Hard Hat Work clothes Harness
		Asphalt whit wapor menbrana	0.005m/76m ² /0.38m ³	
	strucure	Wafe plate	0.036m/148m ² /5.328m ³	PPE Gloves Hard Hat Work clothes Harness
		Damp proof membrane	0.00043m/76m ² /0.03268m ³	
		Steel beam		
		Insulation	0.2m	
		Neoprene membrane	0.2m/76m ² /15.2m ³	
			0.01m/24m ² /0.24m ³	
	ceiling	Gypsum board	0.03m/112m ² /3.36m ³	PPE Gloves Hard Hat Work clothes Harness
		Metallic profile	0.05m/	
	Internal	Gypsum board	0.00125m	PPE Gloves Hard Hat Work clothes
Steel profiles		0.98m		
Hemp insulation		0.093m		

Wall	Structural wall	Steel framing Neoprene membrane Damp proof membrane OSB board Hemp insulation	0.09m/96.01m ² /8.6409m ³ 0.05m 0.0043m/96.01m ² /0.04128443m ³ 0.01m/96.01m ² /0.9601m ³ 0.085m/96.01m ² /8.16085m ³	PPE Gloves Hard Hat Work clothes
	Double skin (ceramic)	Galvanized steel profile Steel piece Hemp insulation ceramic	0.02m 0.18m 0.175m 0.05m	PPE Gloves Hard Hat Work clothes
	Doble skin (kryon)	Steel beam Kryon surface Board waterproofed Hemp insulation	0.17m 0.015m 0.01m 0.1m	PPE Gloves Hard Hat Work clothes
	Internal partition wall	Gypsum board Metals profile with insulation	0.03m 0.07m	PPE Gloves Hard Hat Work clothes
Green house	Ceiling	Gypsum board Metallic profiles	0.03m/34m ² /1.02m ³ 0.5m	PPE Gloves Hard Hat Work clothes Harness
	structural	Steel frame Neoprene membrane OSB board Damp proof menbrane	0.09m/17.01m ² /1.5309m ³ 0.01m/1.575m ² /0.015775m ³ 0.01m/34.02m ² /0.3402m ³ 0.00043m/17.01m ² /0.0073143m ³	PPE Gloves Hard Hat Work clothes
Local energy production facilities	Photovoltaic panels	Cell, monocristaline silicon	0.0151m/4.8m ² /2300kg/m ³	PPE Gloves
		Thermal insulation	70.73m/232.8m ² /2500kg/m ³	Hard Hat
		Metal frame	0.2517m/80.04m ² /2700 kg/m ³	Work clothes
		Polyphenylene oxide PPO	0.002m/0.06m ²	Harness
		Cell, amorphous silicon	0.0151m/4.16m ² /2300 kg/m ³	
		Glass	0.9635m/265m ² /2200 kg/m ³	
	PVB foil	0.335m/9.24m ² /1070 kg/m ³		
ground				

5.3. Site description.

The Ébrick prototype will take place in La cite du Soleil, Versailles, France.

Versailles is a city in Île-de-la France region, world-widely renowned for its château, the château de Versailles and the gardens of Versailles, designated UNESCO World Heritage Sites. According to the 2008 census, the population of the city is 88,641 inhabitants, down from a peak of 94,145 in 1975.

The history of Versailles and its famous king, Louis XIV, is connected to the sun, which the illustrious monarch made his emblem.

A new tow, founded by the will of King Louis XIV, it was the de facto capital of the kingdom of France for over a century, from 1682 to 1789, before becoming the cradle of the French Revolution. After having lost its status of royal city, it became the préfecture (regional capital) of Seine-et Oise Département in 1790, then of Yvelines in 1968, and a Roman Catholic diocese. Versailles is historically known for numerous treaties such as the Treaty of Paris, which ended the American Revolutionary War and the Treaty of Versailles, after World War I.

Located in the western suburbs of the French capital, 17.1 km (10.6 mi) from the centre the Paris, Versailles is in the 21st century a wealthy suburb of Paris with a service based economy and a major touristic destination as well.

Our prototype will take place in the lot S2. The lot size is 20*20m2

5.4. Climate description

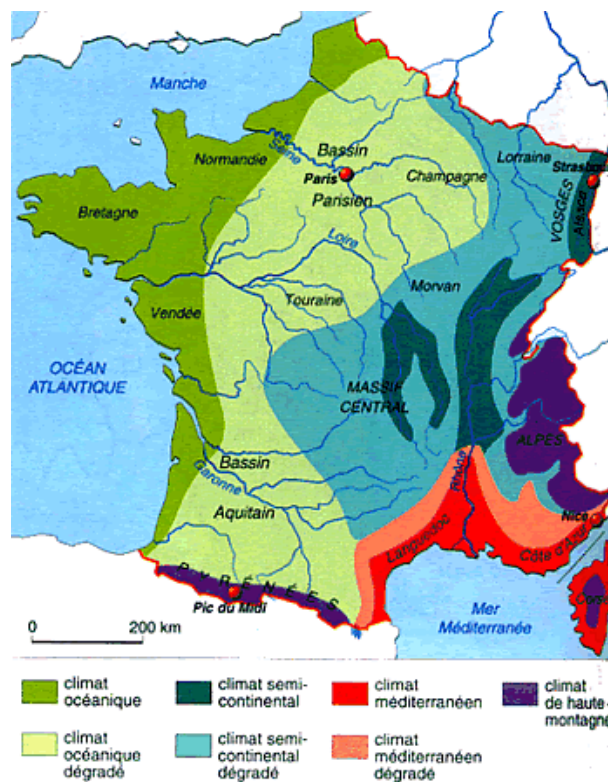
The prototype is going to be build up in Castellón (Spain) which has a mediterranean climate. Mediterranean climate is found between the 30o and 45o degree latitudes. This climate is often found on the western sides of continents. Mediterranean climate gets its name from the climate found around the Mediterranean Sea. Is very mild (few extreme temperatures), so it really on has 2 seasons: summer and winter. Summers are longer than winter, and the winter is very mild. Very few places experience snow in a Mediterranean climate. The seasonal changes are due to changes in ocean currents and water temperature.

However we are going to focus more in the climate in Versailles.

The type of climate in Versailles: typical Western European oceanic climate which is affected by the North Atlantic Current. The overall climate throughout the year is mild and moderately wet.

Climate during the competition: Summer days are usually moderately warm and pleasant with average temperatures hovering between 15 and 25 °C, and a fair amount of sunshine. Each year, however, there are a few days where the temperature rises above 30 °C. Some years have even witnessed some long periods of harsh summer weather.

More recently, the average temperature for July 2011 was 17.6 °C (63.7 °F), with an average minimum temperature of 12.9 °C (55.2 °F) and an average maximum temperature of 23.7 °C (74.7 °F).



Climate data for Paris (1981–2010)													[hide]
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	16.1 (61)	21.4 (70.5)	25.7 (78.3)	30.2 (86.4)	34.8 (94.6)	37.6 (99.7)	40.4 (104.7)	39.5 (103.1)	36.2 (97.2)	28.4 (83.1)	21 (70)	17.1 (62.8)	40.4 (104.7)
Average high °C (°F)	6.9 (44.4)	8.2 (46.8)	11.8 (53.2)	14.7 (58.5)	19.0 (66.2)	22.7 (72.9)	25.2 (77.4)	25.0 (77)	20.8 (69.4)	15.8 (60.4)	10.4 (50.7)	7.8 (46)	15.5 (59.9)
Average low °C (°F)	2.5 (36.5)	2.8 (37)	5.1 (41.2)	6.8 (44.2)	10.5 (50.9)	13.3 (55.9)	15.5 (59.9)	15.4 (59.7)	12.5 (54.5)	9.2 (48.6)	5.3 (41.5)	3.6 (38.5)	8.5 (47.3)
Record low °C (°F)	-14.6 (5.7)	-14.7 (5.5)	-9.1 (15.6)	-3.5 (25.7)	-0.1 (31.8)	3.1 (37.6)	6 (43)	6.3 (43.3)	1.8 (35.2)	-3.1 (26.4)	-14 (7)	-23.9 (-11)	-23.9 (-11)
Precipitation mm (inches)	53.7 (2.114)	43.7 (1.72)	48.5 (1.909)	53 (2.09)	65 (2.56)	54.6 (2.15)	63.1 (2.484)	43 (1.69)	54.7 (2.154)	59.7 (2.35)	51.9 (2.043)	58.7 (2.311)	649.6 (25.575)
Avg. precipitation days	10.2	9.3	10.4	9.4	10.3	8.6	8	6.9	8.5	9.5	9.7	10.7	111.5
Mean monthly sunshine hours	55.8	86.8	130.2	174.0	201.5	219.0	238.7	220.1	171.0	127.1	75.0	49.6	1,748.8
Percent possible sunshine	21	30	35	42	43	45	49	50	45	38	27	20	37.1

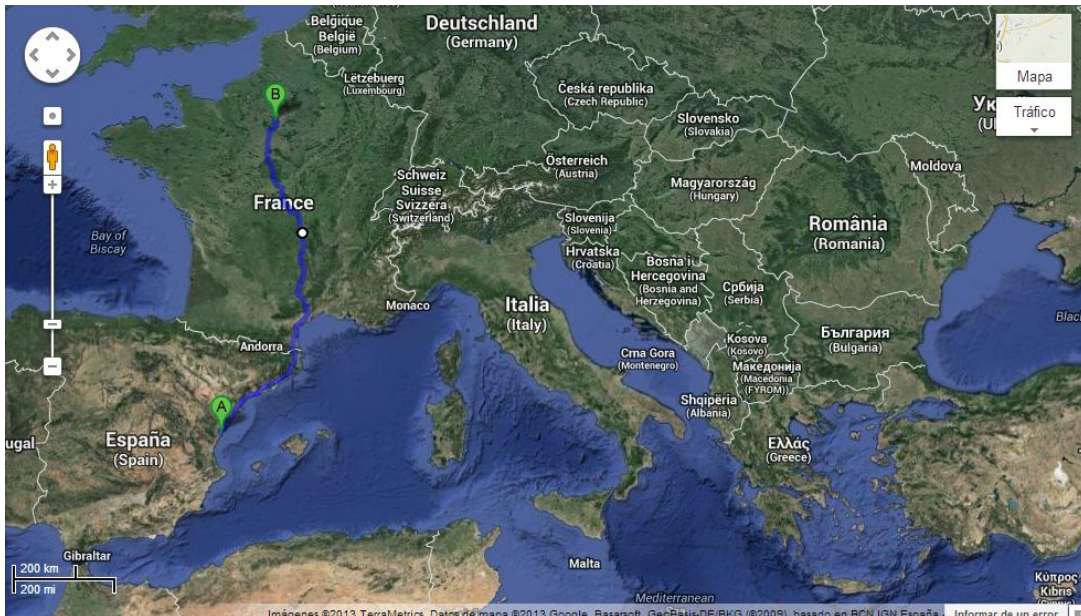
Daily information can be obtained from the services of Meteorology National (Antenna WEATHER France - Tel: 0892,680,213.).

5.5. Accesses and paths for vehicles.

People transporting from Castellón (SP) to Versailles: transport van

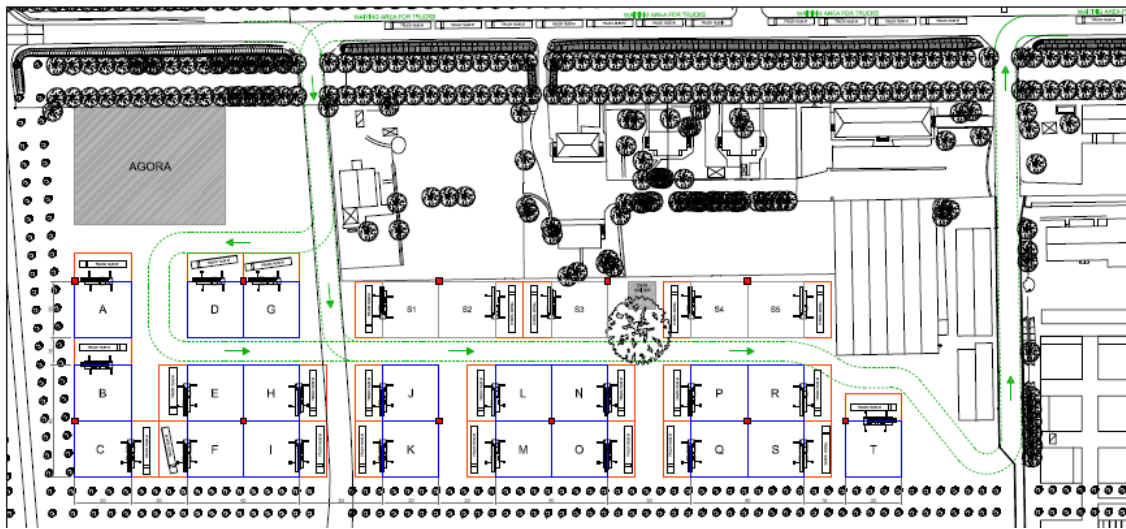
People transporting from Horsens (DK) to Versailles: transport van

Transportation of common materials and people by road From Castellón, distance: 1341km.



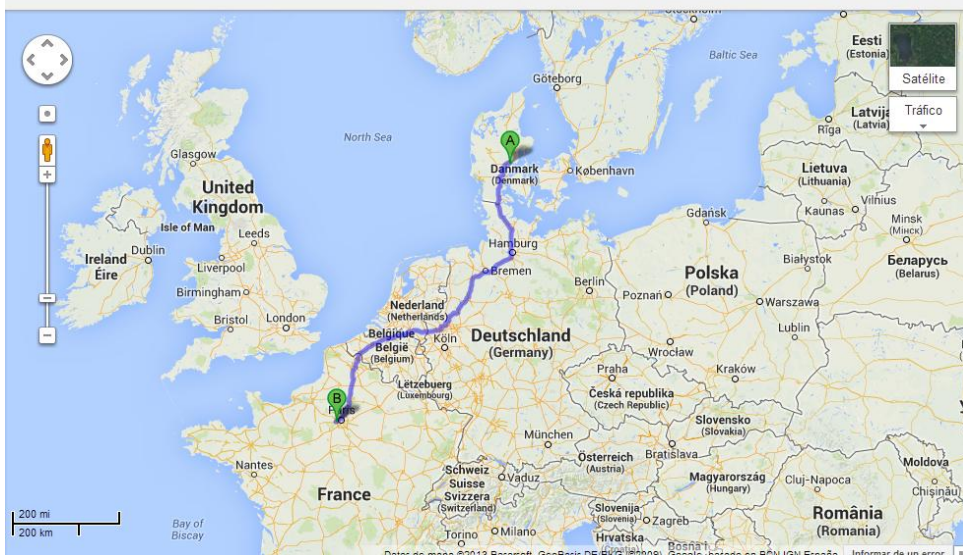
From castellón take the AP-7 Direction Barcelona, go 263km and take the exit in AP-7/E-15 direction Barcelona/E-9/Terrassa/Manresa/Girona/França 25.9km continue E-15/AP-7/Girona/França 137km. Continue to A9 120km. take the exit to A75 direction Clermont-Ferrand/Millau/Béziers 336km. Continue for the A71 290km. Join up to A10 14.6km. Follow the signals to Paris/chartres 81.9km. Take the exit to N118/Versailles/Boulonge-Billancourt/Paris-Porte de saint-Cloud/Les Ulis. Continue to N118 16km. Take the exit To Versailles/Rouen. Join Up a A86 3.1km. Take the exit 4 to D91 Dierction Versalles/Château.

ACCES AND ROUTES AND ROUTES INSIDE LA CITE DU SOLEIL.



When our trucks and the equipment van are moving in La Cité Du Soleil, the speed of the vehicles will adapt to the step of a man, but maximum 5km/h. Our equipment van will arrive first into the lot, and it will be used as an equipment container. It will stay at the same place during the construction, and it will leave the lot last after the assembly.

Transportation of common materials and people by road From Horsens, distance: 1196km.



RISKS DURING THE TRANSPORT

According to the EU-OSHA the European Agency for safety and health at work and the document managing risks to drivers:

In the road transport sector, as with any other, it is important to pay attention to working conditions in order to ensure a skilled and motivated workforce. Certain characteristics of the sector make it more difficult to practice risk management than in other sectors. But by taking account of how the sector operates in practice, and the characteristics of drivers themselves and the way they work, risks can be successfully managed.



Occupational risks in the road transport sector

Road traffic accidents are a leading cause of workplace death, injury and disability in many countries around the world. Road transport drivers are regularly exposed not only to the dangers of the road, but to a broad range of other hazards and OSH issues associated with both driving and non-driving tasks. These include:

- loading and unloading vehicles
- slips and trips and falls climbing in and out of cabs
- rest and toilet facilities
- vehicle design and maintenance
- musculoskeletal and vibration-related disorders
- hot and cold cabs
- noise
- stress
- working hours, shift work and fatigue

- violence from members of the public
- exposure to hazardous substances
- lone working and working away from a fixed base
- Unhealthy lifestyle – for example lack of exercise, poor eating habits.

For risk management it is also important to recognize that drivers are not a homogenous group and include:

- older drivers
- young drivers
- women drivers
- Cross-border workers.

In addition, road transport drivers require high levels of professional skills and competence. They have a major responsibility on the road.

OSH solutions, e.g. safer driving measures, may require additional time to carry out. This must be taken into account both in work organization and work scheduling. On the other hand, the introduction of defensive driving can result in lower fuel consumption and therefore cost savings.

Training, refresher training and ensuring that procedures are properly followed are very important for drivers, but they must be carried out in the framework of an organizational system aimed at preventing risks and with clear management commitment.

Diversity in the workforce needs to be taken into account – for example, the needs of older and younger workers, women drivers and foreign workers should be considered.

More information about occupational risks to drivers in the transport sector

5.6. Determining factors for the house placing

The house is placed in the corresponding lot as determined by the SDE Organization. Our lot size is 20 *20 m² and 10*20m² for the storage

The soil is firm enough to hold the house. The prevailing material of the soil is dust and sand. There are no special singularities in the lot. The organization will provide us a platform to grant the level.

5.7. Overlaps with the affected services and other circumstances or activities of the environment, able to cause risks during the construction

Before setting-out the éBRICK house it will be determined whether or not there are any kinds of risks during construction associated to possible existing rights or easements on the plot or surrounding services. This is an important point that all the workers have to pay attention.

RISKS GENERATED BY OTHER

Some of the tasks will be:

- Circulation of heavy vehicles (cranes, trucks, etc.)
- Pedestrian circulation
- Load manipulation (cranes, forklifts, etc)

And the risks associate with these tasks can be:

- Risk of collision with other teams' workers and heavy machines
- Run over
- Fall from the same height

These risks can be avoided if:

- Circulation on the places reserved for such activity.
- Pay special attention to crossing, when coming out of demarcated areas towards non demarcated areas, near places with heavy machinery, areas with low visibility, etc.
- No running.
- No jumping of any fences or any other object meaning a demarcation.
- Warn the workers near you of your presence.
- Pay attention to signals.

RISKS GENERATED BY ENVIRONMENT

Risks and Preventive habits **for Heavy rain or rain of long-term**

Risks

- Degradation of the land

- Electric shock due to humidity (electric tools)
- Sliding (scale, scaffolding.)

Prevention

- Use anti-slide mats on slipping surfaces
- Regularly remove water from the floor with scrapers
- Replacement of defective cables
- Waterproof plugs
- Protective Clothes

Risks and Preventive habits **for extreme heat:**

Risks

- Deshydration
- Heat-Stroke
- Sunburn
- Insulation

Prevention:

- Regularly drink water even if you do not feel thirsty (Approx. One glass of water every 15-20 minutes)
- Wear pale colors and 100% cotton clothes. Long-sleeve shirts and long trousers.
- Wear ample but light and light-coloured clothing which allows sweat to evaporate.
- Protect your head from the sun
- Avoid or reduce too much physical exertion
- Adapt your pace of work to your tolerance to heat
- When working outside, try to work in the shade where possible
- Remember to turn off any electrical equipment which produces unnecessary heat.
- For those parts of the body directly exposed to the sun, use sun protection, and apply it frequently (several times per day)
- Try work in shade places if it is possible

Risks and Preventive habits **for wind**

- Falling materials

- Be hit with any material of construction
- Fall from the deck
- Visibility problems

Prevention:

- Stop work if the wind is too strong (>45KM/H)
- Safety glasses
- Protection from falls by persons and from falling objects in the upper part of the retaining walls
- Protection from falls from heights and from falling objects onto traffic areas and onto work platforms

RISKS GENERATED ON OTHER

Risks

- Trapped by turned over machines, tractors or vehicles
- Falling objects
- Electrocution

Prevention:

- Protection against falls from covering heights compatible with planned roof work
- Coordination of work in order to avoid risks
- Delimitation of the working area and posting signs to prohibit access to persons working or travelling nearby
- Protection from falls from heights and from falling objects onto traffic areas and onto work platforms
- The operator shall be equipped with all necessary individual protection equipment and make sure that third parties are kept away.

SELF GENERATED RISKS

Risks:

- Overexertion

Prevention:

- Training exercises before and after the shift
- Have a good a physical condition
- Prohibition of carrying loads in excess of 20 kg for men and 15 kg for girls
- Proper posture to carry load

5.8. Description of works

Assembly

Phase 1: Site preparation.

The installation of the security fences in the lot is the first thing to establish as it is part of a safe building site for team members as well as for any other people at La Cite du Soleil

Then, the first truck unloads the container, containing first aid, the tent, tools, smaller machinery and the rest of the materials necessities for the works. After that, the next thing to do is set up of safety basics and to guarantee the supply with electricity and the rest of the group organize access to the tools inside the container. Regarding the electrical set up and electrical installations it is to mention that all work is done without voltage in circuits.

Once all the safety measures are done, we can continue with the assembly of the prototype

Phase 2: Foundation

First thing that we have to do is layout, place and level the plots. The plots consist of adjustable steel elements, which dispense the occurring forces to the ground and guarantee the pressure of the house. The installation of the foundation has to be done very conscientious as it forms the basis of the house. In case these works are not done properly all subsequent works are more complicated. This means every single post base made of steel needs to be placed to its exact position.

Phase 3: assembly the structure of the stand and the floor and the roof of the greenhouse.

Before start to establish the modules we need to prepare the other elements of the prototype so when we go to assembly the rest of the modules with the crane, all the elements will be ready to be assembled between them.

For this phase we are going to use most of the hand tools, for that we have to pay attention and use the adequate individual protective.

Phase 4: establish the prefabricate modules/ structural works

The prefabricated modules will be unloaded and assemble during this phase. It's a critical phase because these modules are large and weighs several tons. All modules are prefabricated with the structure and the interiors are also inside the modules.

In this phase the truck will unload each module corresponded in each order. The elements are supposed to be lifted and simultaneously placed by crane (and its professional crane operator). In this stage a special focus is laid on safe crane. Therefore the crane's operating area is marked by visual signals. Besides, there are only as few workers on site as necessary. It's important to take care about the rain and protect the house whit a tent or with permanent waterproof films.

First we will implement the module A, once set up we well seal the module B. module E, module C and finally module D.

Phase 5: Establish the windows and the greenhouse in the prefabricate modules.

To take advance to the crane used in the before phase, we will install the glasses of the greenhouse. This part is very delicate for two reasons, one because is very weigh and also because is made in glassed. We have to take care in the attached the walls to the prefabricate modules.

Now is time to install the windows. In that phase it makes sense to start with the installation of simple elements. At this point a team member will gets a professional instruction into the process of these works.

Phase 6: exterior cladding

In this phase we will place all the exterior cladding made with ceramic tiles, this is the largest phase in the construction (four days) and the most tedious task because the members have to handling all the cladding panels and this will cause overexertion on the decathletes. Also, with the scaffolding, because it will be the possibility of fall persons from the scaffold, or fall objects or tools in the heads. For that reason is so important to use the adequate collective and individual protection.

Phase 7: installation of the PV panels, Technical installations

First of all, we will implement prefabricated frames. To minimize the working at height, PV panels will be previously fixed on frames. Then, we will implement joints between frames and sheet metal work. To finish, electricians will wire lighting and PV panels.

By the time all structural work is done it is time to set up the remaining technical installations needed for electricity. Technical installations are to be done inside as well as outside the house. These working steps may take place simultaneously and will be team experts in each area.

For roof works there are special collective and additional individual protections generating the highest level of security. A scaffold structure is mounted on the outside perimeter of the roof in order to assure the team member's security. This scaffold complies with the regulations and will be established by an expert worker and it will be only few and trained workers working on the roof wearing individual protection like safety belts. Setting up the solar system of the house it's time to connect all the electric cables

Phase 8: establish the plot.

Once the prototype is done, the landscape is designed by assembling a wooden deck with the ramp.

The exterior platform is the first thing to be adjusted. As soon as the substructure of the deck is mounted, the prefabricated wooden floor elements can be laid on top. Then they only need to be screwed together.

Phase 9: finishes

When the exterior as well as interior works end, it's time to prepare the decoration of the interior of the house. We will try to create a great atmosphere for all the visitors, for that we will place the plant in the greenhouse and choose the best furniture according with the house and the outside.

During this last phase the team cleans up the house and the whole construction site.

All the house's final inspections and approvals by the SDE Organisation should be conducted. In that case the house can be taken into operation and the last justifications of the technical equipment are taken.

Last, the tool and first aid container needs to be loaded and removed.

Maintenance:

The “maintenance” of the house confines to few measures: installing and checking instrumentations like sensors and data loggers for competition purposes, comparing measurements of the organization and the ones of the team, closing windows and doors after public visits, tidying up the house for the next day of presentation, performing the required contest like washing.

Once the prototype tested, maintenance operations will be concentrated in cleaning the house and its surroundings, cleaning solar panels (thermal and photovoltaic) and change the filters of the heat pump.

Furthermore, problems in electrical installation could appear so repairing the electrical installation is an eventual maintenance activity. These are processes which do not obtain a high safety risk. Nevertheless it is to mention that these activities are only accomplished in times there are no visitors on site.

Disassembly:

The disassembly of the prototype follows almost the same procedures as the assembly but the other way around. First of all, the set up of the construction site has to be dismantled. That means in particular that all safety measures have to be established and everything has to be prepared in order to guarantee a continuous workflow. The house is taken out of order. The supply of electricity has to be secured by installing the generator again. Then the disassembly of the house can begin.

All moveable interior and exterior elements are to be cleared away. After that, parts of the interior as well as the finished floor elements are to be disassembled.

The suspended ceiling, the facade and the curtain is removed. Meanwhile the wooden deck can be disassembled. Inside the house the interior works go on: demounting all furniture and technical installations like household appliances, building automation, cooling ceiling and lightning. Also the finished floor needs to be disassembled. After that the outside works concerning the technical installations (photovoltaic, solar thermals and tanks) are accomplished after the disassembly of deck’s substructure. Step by step all moveable and portable elements are disassembled, carefully packed and loaded into trucks until the

framing is the only thing left. By the help of the crane all glazed elements, the roof elements, all the modules and the floor elements have to be disassembled, similar to assembly. Before tidying up the site and leaving it as found, the foundation has to be demounted.

5.9. Trades whose intervention is affected by the risks prevention

The équipe VIA-UJI wants that any risks wouldn't happen in any of the phases, for that we make a safety plan and OBLIGES ALL ITS MEMBERS TO KNOW AND STUDY it as well.

It is important to be informed about European directives on labor safety, on Spanish and French labor safety legal regulations and procedures before the work starts in Spain or in La Cite du Soleil in Versailles.

The visitors will be instructed concerning H&S issues in the team's lot and if the H&S officer judging by the nature of the works in process, may grant and assist the visitors for a visit inside the team's lot.

In order to guarantee their safety the team prefers and focuses on developing collective protection instead of individual. An individual protection only is an additional measure reducing the risk level even more.

Almost, HS Coordinator will ensure that whenever important activities are being developed, visitors shouldn't be inside the lot and shouldn't disturb.

Safety measures must be made or agreed for our own team, with the team who will be our direct neighbors and visiting works. With the transport company, with supporting companies working on-site (crane operator, etc.) with the SDE organization and with visitors and guests guides.

5.10. Auxiliary resources planned for the construction.

The following list shows the auxiliary resources that will be used in the assembly of the éBRCK house and the references in the HS -Drawings.

AUXILIARY RESOURCE	ACTIVITY
Tools storage container	All activities requiring the use of a material that is stored inside the container
Tent	The tent will be useful for resting and dining area, water supply for workers, hosting first aid equipment, etc.
	All activities requirement electrical

Generating set and electrical panel	power. (the organization will provide us)
Lights	To produce light during the night
Scaffoldings	Assembly structure and panels
Fences	To delimited the perimeter of the lot

5.11. Machinery planned for the construction.

MACHINERY	ACTIVITY
Transport van	The van will be used for the transport of people as well as materials
Transport truck	Unloading, stocking and loading with crane.
Crane	load/unload materials from the truck and establishment of construction element
Hand tools	Cut, drill, screw, etc.
Forklift	To move heavy loads in the lot
Fences	To delimited the perimeter of the lot

5.12. Construction site installations and description of hygiene conditions

Construction site reception facilities		Duration of work		Comments
		> 4 months	< 4 months	
All premises		X	X	Ventilated, illuminated and heated; kept in a constant state of cleanliness.
			X	If permanent premises are not suitable, there is the possibility of using construction vehicles which are specially equipped for this purpose and which must be able to meet the same needs. For an underground construction site, the cloakroom must be located above ground. An underground room is tolerated on an exceptional basis, and only in the absence of other solutions. It is only accepted if it is possible to both ventilate and illuminate the area properly and to keep it clean.
Cloakroom	Lockers in the cloakroom	X	X	Non-flammable, divided into 2 compartments
			X	If the construction site is too narrow to accommodate lockers, there is the possibility to replace them with clothes hooks in sufficient numbers.
	Seats	X	X	There must be a sufficient number of chairs which must be cleaned after each meal.

Catering area	Tables and chairs	X	X	In sufficient numbers, cleaned after each meal.
	Heating or cooking devices	X	X	Mess tin heaters, stove, microwave...with operating instructions
	Cold and hot drinkable water	X	X	A tap for every 10 users is recommended (OPPBTB) (mandatory when at least 25 employees eat their meal)
	Pantry or refrigerator	X	X	Refrigerator recommended (OPPBTB)
Drinkable water	To drink	X	X	Fresh drinkable water, at least 3 litres per employee, per day
Bathrooms	Sinks	X	X	Sinks, at least 1 for every 10 employees or an equivalent ramp system
	Water for washing	X	X	Running water at an adjustable temperature
				X
	Means for cleaning, drying and swiping	X	X	Appropriate liquid soap, towel rolls or adapted electrical hand dryers.
Toilets, urinals.		X	X	A toilet and urinal for every 20 employees (or 2 bathrooms) Toilet paper At least one bathroom with water access.
Showers		X	X	Recommended installations: 1 shower for every 3 persons is mandatory for work which is messy, unsafe...

Construction site reception facilities		Duration of work		Comments
		>4 months	<4 months	
Restroom	Armchair protected of the sun		X	The restrooms shall be sized so as to take into account the presence of any female staff.
	Chair		X	There must be a sufficient number is chairs .
Changing room	wardrobe		X	Divided into 2 compartments
	Bench to sit while you are changing		X	There will be sufficient benches to let workers sit while they are changing its clothes

5.13. Characteristics table for stocks.

Material	Characteristic	Dimensions	Transport	Location
Tools	Accessible for the workers	4.00m*1.20m	By van	inside the lot
Wood	heavy	3.50m*4.50m	By truck	inside the lot
Windows	delicate	6.00m*3.20m	By truck	inside the lot
Greenhouse floor and roof	delicate	2.50m*8.00m	By truck	inside the lot
Stand	heavy	1.50m*7.00m	By truck	inside the lot
Paper	Waste	4.00m*1.20m	-	inside the lot
Inert	waste	1.50m*1.20m	-	inside the lot
Plastic	waste	3.00m*1.20m	-	inside the lot

6. Activities for risks prevention

Before the construction starts its necessary to inform and teach the workers about the risks they are exposed before, during and after the works and the preventive measures to adopt. Every decathlete and workers who will take part in the works will receive a course about risks prevention in origin, collective protection and individual protection.

Équipe VIA-UJI will make the following activities:

Periodic team meetings: In these meetings, also will be studied the measures and activities for reducing and eliminate risks that wouldn't be considered previously or improvement of the actions when important changes appear which change the Health and safety conditions in works. Every worker will communicate the risks detected suggesting improvements on the measures adopted.

Courses: we are going to make different groups for the construction. Every group will be responsible of a different part or system of the house. Every group will be trained to develop its activity as well as possible. This training will be given by the H&S members in collaboration with the companies which provide the materials and systems.

Work Training: the house will be built and un-built before the competition in Versailles. This will allow the team to practice and reduce the risks associated to the building construction and be conscious about the possible risks that may appear in each phase.

Activities that the team will develop during the works

Assistance to daily meetings with SDE Organization: The responsible of the H&S during construction will attend to the daily meetings that are established by the SDE Organization. This will help the team to control properly the security measures and inform the organization about any issue that could arise.

Daily internal meeting with the team members of every shift previously: At the end of the day, internal meetings will be made to talk about every incidence, change or communication to/from the organization and to see if everything is going to do as we expected.

Internal meeting with the team at any time to coordinating, organization and explanation

6.1 Construction plan: determination of work effective timing.

0. GENERAL INFORMATION	FUNCTION	CONSTRUCTION WORKING TEAM	NAME	TELEPHONE NUMBER	
	1	Site Coordinator	Working Team Morning	David Fernandez-Camuñas Gallego	
	2	Site Coordinator	Working Team Afternoon	Daniel Þor	
	3	Site Coordinator	Working Team Night	Santi Bellmunt Conde	
MAIN	NAME	DIMENSIONS [m]	WEIGHT [kg]	MACHINERY USE FOR UNLOADING/LOADING	
	1	Foundation Elements (adjustable plots)	several components	to be estimated	by hand or fork lift
	2	MODULE A: Bathroom module	4.0 x 2.20 x 3.30	to be estimated	Crane

3	MODULE B: Kitchen and main facilities	8.0 x 3.00 x 3.30	to be estimated	Crane
4	MODULE C: Long void module	8.0 x 3.00 x 3.30	to be estimated	Crane
5	MODULE D: Short void module	4.0 x 2.20 x 3.30	to be estimated	Crane
6	Exhibition module structure + furniture	8.30 x 1.50 x 3.30	to be estimated	Crane
7	Greenhouse elements	several components	to be estimated	Crane
8	Platform elements	several components	to be estimated	by hand or fork lift
9	Ventilated Façade structure + ceramic tiles	several components	to be estimated	by hand or fork lift
10	Solar caption elements	several components	to be estimated	Fork lift
11				
2. VEHICULES (Trucks, Vans, etc.)				
	TYPE	DIMENSIONS [m] (Tractor unit + Trailer)		WEIGHT [kg] (Truck + Loading)
1	TRUCK 1: foundation elements, greenhouse elements, exhibiton module	5,79 + 14.50		to be estimated
2	TRUCK 2: Module A & B	5,79 + 14.50		to be estimated
3	TRUCK 3: Modules C & D	5,79 + 14.50		to be estimated
4	TRUCK 4: External cladding, solar caption elements, and other finishing materials	To be stimated (Possibly not trailer but light truck)		To be estimated
5				
6				
7				
...				
3. CRANES				
	CAPACITY			USAGE TIME
1	35T crane: Module A			8h
2	35T crane : Module B			
3	35T crane: Module C			
4	35T crane: Module D			
5	35T crane: Greenhouse components			

ASSEMBLY	PHASE	MATERIAL AND EQUIPMENT RESOURCES	HUMAN RESOURCES	DURATION	
	0	Site preparation (infrastructures)	hand tools	6-8 workers	8h
	1	Laying of ground foundations	hand tools	6-8 workers	16h
	2	Assembly Exhibition module	Fork lifting, scaffolding, hand tools	6-8 workers	8h
	3	Placement of Module A	Crane, fixing tools	6-8 workers	
	4	Placement of Module B	Crane, fixing tools	6-8 workers	
	5	Placement of Module C	Crane, fixing tools	6-8 workers	
	6	Placement of Module D	Crane, fixing tools	6-8 workers	
	7	Assembly of Greenhouse + PCM system	Crane, fixing tools	10 workers	
8	Finishing Roof	hand tools	6-8 workers	8h	

		9	Interior installation	hand tools	6-8 workers	8h	
		10	Interior works	hand tools	6-8 workers	8h	
		11	Photovoltaic installation	hand tools, scaffolding	10 workers	32h	
		12	External Cladding	hand tools, scaffolding	18 workers	88h	
		13	Installations	hand tools, scaffolding	8 workers	16h	
		14	Platform	Hand tools	8 workers	16h	
		15	Finishing	Hand tools	8 workers	16h	
		16	Furniture and interior design	Hand tools	8 workers	16h	
	DISASSEMBLY						
		1	Disassembly platform	hand tools	8 workers	1 day	
		2	Disconnecting electrical and plumbing systems	hand tools	2 workers	6h	
		3	Disassembly of PV systems	Fork lifting, scaffolding, hand tools	8 workers	8h	
		4	Disassembly of Greenhouse	Fork lifting, scaffolding, hand tools	10 workers	1 day	
		5	Removal of Modules C & D	Crane, hand tools	6 workers	4h	
		6	Removal of Modules B & E	Crane, hand tools	6 workers	8h	
		7	Removal ground foundations for modules B, C, D and E	hand tools	10 workers	5h	
8		Removal of Module A	Crane, hand tools	6 workers	4h		
	9	Removal ground foundations for module A	hand tools	10 workers	2h		
	10	site cleaning	hand tools	10 workers	4h		

		TYPE		VOLUM [m3] or WEIGHT [kg]		
5. WASTE MATERIALS	ASSEMBLY	1	Cardborad or similar materials	to be estimated		
		2	Plastic materials (wrapping)	to be estimated		
		3	Metal wasted (from on-site adjustments)	to be estimated		
	DISASSEMBLY	1	to be estimated			
		2	to be estimated			
		3	to be estimated			
...						
		DESIGNATION	DIMENSIONS [m]	WEIGHT [kg]		
6. COMPONENTS TO BE STORED DURING COMPETITION PHASE	1	Light working tools				
	2	Electric and plumbing replacement				
	3	Individual Safety Equipment				
	4	Lot limitations (fences, barrier tape or similar)				
	5					
	6					
	7					
	...					

6.2 Overlaps and incompatibilities in the construction

There are 23 teams assembling their houses in a very short period of time there surely are activities accomplished at the same time. Besides, all these activities want to be documented by the teams themselves, by the SDE Organization as well as by public press. In order to secure the safety of all the involved persons (team members of other teams, visitors, press, film crew, SDE members, etc) we have to be careful whit the activities that can cause overlaps and incompatibilities.

In the maintenance process there are not contemplated possible risks due to the overlap operations and activities, the main prevention procedure is situate in different places the activities to avoid these kind of risks and is very important in other case to analyze the activities that will developed at the same time, and analyze:

- People around the plot
- Movements of visitors and general public
- Other team Works
- Other teams vehicles
- Movements of others cranes

Tasks that cannot be carried out simultaneously:

- Movement of suspended tasks over workers carrying out other tasks
- Works on higher levels above workers carrying out other tasks
- Tasks that require electricity while works for the restoration or maintenance of the auxiliary electricity system are being carried out
- Restoration or maintenance tasks of any element connected to the power supply or that might be switched on (in case of having batteries)
- Watering tasks while works for the restoration or maintenance of the auxiliary electricity system are being carried out
- No task can be carried out near the location of the glazed vertical enclosure.

6.3 Number of team members taking part in the construction.

At this moment, we don't know yet the names of all the people who are going to participate but we make a list of the profiles necessities. It will be ready for the next delivery

N	Nuria Sánchez	Faculty Advisors & Project Manager		
PO	Poul Børison Hansen			
T	Teresa Gallego			
	SDE 2014 & Project Experts	SHIFT		
1	(VIA)	A	These workers must verify that it is built according to the rules and the project manual.	
2	Eduardo del Olmo	B		
3	Yoanna Ruseva	C		
	Site Operation Coordinators			
CM	David Fernandez-Camuñas	A	Decathletes responsible for the assembly process. They must know the rules.	
C1	Daniel por	B		
C2	Santi Bellmunt	C		
	Health & Safety Coordinators			
HS	Rosa Prades	A	Decathletes responsible for the health and safety in site operations	
S1	Noelia Pitarch	B		
S2	(VIA)	C		
	Assembly Experts			
1	Windows	Decathletes trained in the assembly of specific elements.		
5	Exterior Cladding 1			
10	Exterior Cladding 2			
14	Exterior Cladding 3			
12	Photovoltaic Installation 1			
13	Photovoltaic Installation 2			
7	Photovoltaic Installation 3			
9	PCM			
4	Waterproof			
8	Electricity & Plumbing			
6	Foundation			
	Workers			
15	Engineering		Decathletes workers	
16	Engineering			
17	Engineering			
11	Engineering			
18	Construction			
19	Construction			
20	Construction			
21	Construction			
22	Construction			

6.4 Contracting planned

Logistic company, crane company

7. Critical work phases for risks prevention

In the next list are identify which activities mean a "serious risk", in accordance with the definition established in RD. 1627/1997 annex II:

- Operations with especially serious risks of burial, collapse or falling from a great height difference, due to the activity's characteristics, the procedures applied or the environment.
- Operations requiring the assembly or disassembly of heavy prefabricated elements

In our works we only going to see the risks underlined and this risk will be avoided developing the following prevention measures:

1. The crane will be directed by specialist person, accredited to develop the work and it will start moving only when the coordinator orders and workers must work always in a visible place.
2. The load will be controlled by four lines in every side of the load, long enough to keep off the load.
3. Workers must keep in every moment, the security distance from the heavy fabricated elements being unload to avoid being trapped and hit by the load.
4. This operation will be directed by one experienced persons, independent of the worker who controls the crane and the ones who control the load.
5. In case of fall of the elements, nobody must move until the crane is stopped and it is verify that nothing else can be fallen.
6. All the workers must wear the working clothes, which are clear and include the safety jacket.
7. Workers must work in shifts and machinery for heavy loads will be used when having to move heavy loads and medium loads will be moved by some workers. It is necessary to remember the workers that the maximum weight for one only person is 25 kg

8. Risks identification and efficacy evaluation of the adopted protections

8.1 Location and identification of the areas where the works involving special risks will be developed

ACTIVITY	LOCATION	MEASURES
Unload trucks	Around the lot	<ul style="list-style-type: none"> - Delimitate the next areas: - Truck load / download area - Temporary storage area - Storage area - Circulation area - Posting the needed signals in the area - Working under safe procedures previously studied
Movement of suspended loads thought the use of crane	In the construction lot	<ul style="list-style-type: none"> - Sidestepping the area underneath the crane's working radius, avoiding at any time working underneath suspended loads - Restricted access - Always qualified workers - Posting the needed signals in the area - Working under safe procedures previously studied
Assembly and disassembly of heavy prefabricate elements	Around the crane and underneath the crane's working radius	<ul style="list-style-type: none"> - Maintain the load with ropes - PPE - Coordination of load transport - Sidestepping the area underneath the crane's working radius, avoiding at any time working underneath suspended loads - Posting the needed signals in the area - Working under safe procedures previously studied
Work on the roof	On the roof	<ul style="list-style-type: none"> - PPE (harness and connectors) - lifelines - Posting the needed signals in the area - Working under safe procedures previously studied

8.2 Risks identification and efficiency evaluation of the adopted protections

The risks identified for every activity are indicated in the first column of the risk's evaluation tables included in items B.An.1 and B.An.2 of this document. The protections adopted to resolve every risk are also indicated in the same tables.

The efficiency of these protections allows us conclude that the qualification of the risk with the applied prevention is trivial or tolerable in all cases. The author of this document considers that this demonstrates that the risks are correctly resolved.

9. Collective protections to use

Our Team provides every work unit with collective protections, during the assembly, maintenance and disassembly phases of the house. Our team members, crew and volunteers that will use the collective protections will be trained on their proper use, inspection, and limitations. Concerning technical specifications of the collective protections : it will be in accordance with the current French and European legislation. Although, shall have the "CE" branding, guaranteeing their adaptation to the regulation in force.



The Project Supervisor and each TEAM are responsible for providing, implementing, and maintaining group protection up to its final disassembly or up until the end of construction.

For both the Project Supervisor and each TEAM, the HSE Coordinator implements and maintains these tools.

Sub-contractors can implement group protection in agreement with and under the responsibility of the Project Supervisor and of each TEAM.

All of the group protection implemented by the company on the construction site must be described in detail in its ISHPP.

Group protection must be designed and constructed to meet the following general principles:

-  Always be implemented prior to the onset of any risk
-  Be adapted and sufficient to allow for the completion of various works safely and without dismantling by the Contractor, by its sub-contractors or by companies called on to succeed him on the portion of the work in question

Unless prior special agreement, only the Contractor in charge of maintenance of a temporary group protection will be authorized to disassemble it.

However, group protection can only be disassembled in the following situations:

- ✚ Elimination of the risk related to the advancement of work
- ✚ Definitive group protection of the overall work is in place and is sufficient for the remaining work
- ✚ Another temporary device of equal efficiency is implemented. (A procedure should be established in the ISHPP by the company which falls into this category)

If at the conclusion of the Contractor's work, one or more risks still remain on the structure, the conditions set forth above will apply. The latter must implement group protection in consultation with the Project Supervisor or the TEAM concerned, which are called on to succeed.

All construction workers whose interventions require the removal of group protection implemented by the Project Supervisor or by each TEAM must implement, after agreement from the Project Supervisor and the TEAM involved, replacement equipment suitable to carry out its work, ensuring effective group protection. It also ensures maintenance until the end of the construction or until the replacement of initial protection.

Safety devices implemented by a company for its personal use (scaffolding, nets, barriers, etc.) or group protection shared with other companies can only be moved or changed by those who originally installed them.

Any modification will be joined as an addendum to the ISHPP before work commences.

This is a complete list of the collective protections.

Fences: fences around the lot, security fence for passage obstacle. The fences will be 90 cm high minimum and they will be made by metallic tubes and legs to keep them vertical. This way, people from outside the team won't be able to go in, and people working inside the lot will be protected from possible traffic-related risks.

Upper fence provides support for the hand and prevents the fall Intermediate fence placed between the main rail and skirting prevents the passage or sliding through the hole. Plinth or skirting is a rigid element placed at ground level. Minimum size: 15 cm from the work surface to prevent falling materials or tools to lower levels.



Fences around the lot

Shoes for vehicles: would be put on the will of trucks and van when they would be stopped on the site in order to avoid them to move.



Beacon cones and band: They will be utilized for marking elements and obstacles situated on the floor and make them visible not to trip over them.



Entrances: in case of evacuation, if any of them is obstructed, the other one is free.

Stepladder: The stepladder will be used to go up to the roof. It must have an anti-gliding and overturning base. The stepladder must be at least 1.00 m. higher than the highest point to reach up with.



Fire extinguisher: A fire extinguisher will be placed in an easy access place for utilization in case of fire.



General lighting: general light generators will be placed in the lot to provide enough light for the works taking place when the conditions aren't proper. In addition, portable lights will be placed in the lot, so lighting can be adapted to every work.



Small tent: will also be placed in the lot, so there is a zone with shadow and a rest area.



Drinkable water supply in the rest area



First-aid kit: It will be present on the site construction in case of accident where first help will be necessary while waiting emergencies.



10. Individual protection resources to use

According to the RD 773/1997 "sobre disposiciones mínimas de seguridad y salud relativas a la utilización por los trabajadores de equipos de protección individual. BOE nº 140 12-06-1997" The RD 1407/1992, from November 20th will also be complied with, where the marketing and free circulation inside the EU of the personal protection equipment are regulated and the French regulations about protection to use this will be the protections that will be used by the members of the team working in the construction of the house.

Aspects to be taken care of from a PPE (personal protection equipment)

- Demand the CE marking.
- Demand the instructions manual.
- Train and inform the worker following those instructions.
- Follow those instructions.
- Keep up with the maintenance, cleaning and repairing it without losing or changing its initial safety characteristics.

Sun cream and cotton clothes: for preventing sun burns, it is recommended that the team members will wear pale colors 100% cotton and use sun protection and apply it frequently to the parts of the body directly exposed to the sun.



Security boots to protect against: hitting, trapping, punctures. Although there are some protections that there are used only for the development specific activity.



Security helmet to protect from knocking, for all those involved in the work, even visitors during the works.



Reflective jacket to make the team member wearing it more visible



AMARILLO 03 MOD. 5063

Leather or rubber gloves. The different gloves will be used depending on the work developing.



Filtering paper mask to protect from dust



Hearing protection headphones: When there is a team member working in a too noisy activity it will be necessary to wear the hearing protection headphones. Depend on the work the hearing protection will be different, depends on the level of noise.



Glasses to protect from discharges or impacts: When the worker is manipulating or working with impact risks it will be necessary to protect the eyes.



Harness to protect against falls from height. When the worker is working in height, it will be mandatory to wear the body harness to prevent the fall.






10.1 Signposting of the risks



The following annex contains the pictograms we use during the competition on the signpost boards and on the equipments which requires it.




PICTOGRAM	MEANING	WHERE IT PLACE/ACTIVITY
PROHIBITING SIGNS		
	No access	Construction site
	Climbing up the scaffold permitted	scaffold
	No trespass under hanging load	forklift, crane
	No touch	Electric wiring

	No smoking	Construction site
	Open fire permitted	Construction site
	Speed limit 5km/h	All La cite Du Soleil
	Riding on forklift permitted	forklift

PICTOGRAM	MEANING	WHERE IT PLACE/ACTIVITY
WARNING SIGNS		
	General danger	Construction site




	<p>Working on the roof Falling objects</p>	<p>During roof works</p>
 <p>Warning Lorries</p>	<p>Vehicle traffic</p>	<p>Cite du Soleil</p>
 <p>Flammable materials</p>	<p>Flammable material</p>	<p>generator</p>
	<p>Possible hand injury</p>	<p>Construction site</p>
	<p>construction machinery traffic</p>	<p>Construction site</p>
 <p>Danger of falling objects</p>	<p>Handing load</p>	<p>lifting</p>

	Falling	Roof works
	Electric shock danger	generator

PICTOGRAM	MEANING	WHERE IT PLACE/ACTIVITY
WARNING SIGNS		
	First aid kit	Health and safety tent
	Meeting point	Health and safety tent
	Emergency phone	Health and safety tent

PICTOGRAM	MEANING	WHERE IT PLACE/ACTIVITY
INSTRUCTION SIGNS		
	Safety gloves obligatory	Every activities
	headphones	during all the works with high noise
	Safety boots with ankle support and steel or kevlar toe-cup	Every activity
	Safety glasses obligatory	when using angle grinder, works above the head, strong sunshine
	Reflective jacket	Every activity

	Heat protection	Every activity
	Safety harness	Works in high

PICTOGRAM	MEANING	WHERE IT PLACE/ACTIVITY
FIRE PROTECTION SIGNS		
	Fire extinguisher	Health and safety tent
	Evacuation route	Whole the plot
	Fire alarm	Whole the plot

11. Safe working procedures of every Team member

Each worker has to take basic security precaution measures, which are established in the HS plan. Before starting each shift, every worker must read this document.

In the HS Report and HS Drawings, each activity is described, which is a good manual to know how the house is built. The risks and solutions are in two groups. The first one is the general risks and actions, which have to be taken into account during the whole process of construction. The second is the specific risks group, in which the specific risks and solutions of each activity are described.

Each group has the following sections: risks, collective protections, individual protections, preventive procedures and signposting.

The specific safe working procedures are in the corresponding table and drawing. The following safe working procedures are the general preventive procedures:

Coordination and information among workers procedure

Working shifts are established in the HS Report, with the people working in each shift. To coordinate all the information between the different groups, the first 30 minutes of every shift will be used to tell to the following group how the work has been done and if there has been any incident. This information will be written by the HS responsible of each shift in a book to register everything. If there is any problem during construction, the communication will be from the responsible to the Organization, and between responsible.

Access control

The éBRICK house is located on lot S2 on La Cite Du Soleil. The VIA-UJI équipe will work to limit access to registered team members and SDE organisers through the duration of the assembly and disassembly phase. Only members that have been authorized to work on the house and who are familiar with this safety document and applicable procedures shall be permitted access. Team Uniforms will also be used to make team members more visible and unauthorized individuals stand.

Keeping clean the work area procedure

To develop the works correctly, the work area will always have to be cleaned. For this, the cleaning tools will be in the lot.

When any activity of the HS drawings finishes, the lot will have to be cleaned, to avoid possible risks associated to wastes.

The trash will be stored in the assigned place.

Keeping area, tools and materials in order

In the HS Report and Site Operations section, function of each area of the lot has been determined. This distribution has to be maintained. For that, signposting will be used, so every worker knows where is stored every tool. When leaving the lot when finishing the work, each worker has to put everything where it was before arriving. If any tool is broken or in bad conditions, the worker will inform to the responsible, who will write it in the book and tell to the next responsible.

Persons charging load procedure

There are some activities that require the movement of loads. When moving loads, they will only be carried by humans if the weight is less than 20 kg for man and 15kg for women. If the load's weight is more than 20 kg or 15kg, it will be carried by machinery. When the work consists of carrying loads constantly, the worker will make rests when he/she considers necessary.

Persons movement areas procedure

To avoid people from outside the lot going inside, there will be a perimetral fence. This will allow to avoid risks for workers related with outside factors. Inside the lot, during each work phase, the areas where no one can be will be delimited (e.g.: when unloading the modules). If anyone goes inside these areas, the responsible will expel out of the lot that worker.

Trucks and machinery movement procedure

When trucks arrive to the lot or machinery is being used, the following measures will be taken. The workers will have to be sure that the person working with the machinery or driving the truck can see him/her, so the movement of the load doesn't create any risk. The responsible will always be in communication with the person controlling the truck or the machinery to coordinate properly.

Noise reduction procedure: No loud noises are expected. In that case, the worker must put on noise-isolating earmuffs to avoid possible ear hurts.

Persons working in warm and sunny weather procedure

Drinkable water will be provided to the team members in case that the temperature is very high, placing a portable fountain in the lot. For preventing

sun burns, team members will wear pale colors 100% cotton clothes, long-sleeved shirts and long trousers. For those parts of the body directly exposed to the sun, it is recommended to use sun protection, and apply it frequently (several times per day). A small tent will also be placed in the lot, so there is a zone with shadow.

Persons working in cold weather procedure

During nights, low temperatures could be expected. For that, every team member must take a coat to put on and work properly. This coat can't interfere with the working clothes, especially with the phosphorescent vest. Especially at night, this vest is very important, because in case that the light conditions aren't adequate, the person can be seen perfectly.

Procedure in case of hard rain or storms

In case there is a hard rain or storm, every worker will have to wear a water-proof coat. This will allow them to work in better conditions. The small tent will also allow to store under it the pieces which can't be wet.

Work time procedure

The work time is established in the Gantt diagram. Each shift will have to be respected. There are some working gaps, established in case something gets delayed, so the scheduled activities will be developed during the assigned time. In the HS report, the rests are also established. During maintenance, in the first hours of the day, the works will be carried out.

Procedure in case of emergency

In case there is any emergency related to someone being hurt, the steps will be the following:

1. Notify the responsible
2. Notify the Organization
3. See if the emergency requires an ambulance (call 112) and wait. If it doesn't require an ambulance, see the instructions placed in the lot to know how to arrive to the nearest sanitary center.

Despite this, before the competition, courses will be held to know how to act in case of emergency.

In case the emergency is related with fire, the following steps will be followed:

1. Notify the responsible
2. Notify the Organization

3. Clear the lot
4. Use the fire extinguish-tools to extinguish the fire
5. If the fire is big, call the 112

Electrical connections procedure

The works will only be carried out by the person authorized to realize the connections. During this work, the rest of the workers will have limited access to avoid interferences. To unlock the electrical panel, only the HS responsible will have the key. All the works must be done with no voltage in the circuits. When doing any outside connection, waterproof plugs will be used. The Instructions and "CE" branding of all the different elements must state their capability for being used outside.

Movement of the workers out of the lot

The following measures will be mandatory:

- Move from the lot to the outsides as less as possible.
- When going to the lot or leaving it, avoid the path for trucks or machinery the most that you can.
- When crossing the trucks paths, always check that the truck driver can see you, call him/her for the movement to do and check that the driver stop the movements to let you cross.
- Always keep in communication with truck driver and the persons who direct the movements of the truck.
- When going through the truck paths carrying loads, other worker must accompany, directing the movements and advising truck drivers.
- All the workers must wear the working clothes, which are clear and include the safety jacket.

In case of doubt

If there is any doubt about anything, the worker will ask the responsible for help. If the responsible does not know the solution, he will ask the organization to help the team.

12. Machinery and auxiliary resources

It is responsibility of the team to make sure all the equipment, auxiliary means and machinery employed in site comply with the current regulations.

The partial assembly of the auxiliary means, machinery and equipment is forbidden: in other words, omitting the use of one or some of the component included in equipment for its correct functioning.

The use, assembly and conservation of the auxiliary means, machinery and equipment, will be carried out following strictly the assembly conditions and its safe use, explained in the use manual supplied by the manufacturer. Therefore, and in those circumstances in which safety might depend in the installing conditions, the auxiliary means, machinery and equipment will be initially checked before its first use, and again after each assembly in different locations.

All the auxiliary means, machinery and equipment to be used on site will have their own safety devices incorporated when so specified by the current legislation. No auxiliary means, machinery or equipment that does not comply with this is allowed on site.

If auxiliary means, machinery and equipment with the CE marking can be found on the market, the team must keep them in mind and include them when presenting the offer for the work execution, because these are safer than those without the marking.

The team will adopt the necessary measures to make sure that the auxiliary means, machinery and equipment to be used on site are the adequate for the tasks carried out and conveniently adapted to it, in order to guarantee the health and safety of the workers on site. The ergonomics principles will be kept in mind, especially when designing the working spots and the workers position when using the auxiliary means, machinery and equipment

13.Planned measures in case of accident

13.1 First aids

First aid is the provision of initial care for an illness or injury. It is usually performed by non-expert, but trained personnel to a sick or injured person until definitive medical treatment can be accessed. Certain self-limiting illnesses or minor injuries may not require further medical care past the first aid intervention. It generally consists of a series of simple and in some cases, potentially life-saving techniques that an individual can be trained to perform with minimal equipment.

Procedure in case of fire and evacuation The Team members, in agreement with the subcontractors present on site in various aspects, must organize, in terms of resources, people, procedures, to deal, effectively and promptly, with emergencies that may occur for various reasons during works execution and in particular: emergency injury, fire emergency, evacuation of the site. In proximity of the site will be posted up the emergency numbers and the ways to request the intervention of fire fighters and emergency care, as well as the layout of the site. In any case, during the execution of the work all measures against the risk of fire will be respected.

For small emergencies, the site will be equipped to provide immediate responses, for example, modest principles of fire that could be turned off with the use of fire extinguishers present in the site.

If it is difficult to intervene with the use of fire extinguishers or if fire is significant, the assistance of the Fire Department must be requested. The surrounding area and access roads must be immediately cleared of materials flammable and obstacles; workers must be moved away in a safety area.

Next to each activity with risk of fire or where open flame are used there must be at least one fire extinguisher. Offices, deposits of materials and of various kind of substances, machines and installation present, etc. are the places where it is most likely the development of a fire. The work involving the use of open flames (welding, etc..) must be approved and realized only after have taken the necessary precautions (removal of combustible materials, presence extinguisher nearby, etc..). There must be an adequate number of mobile extinction means chosen according to their specific field of use.

Procedure in case of accident or illness: In case of accident or illness during working activities the person assisting the accident or who first becomes aware of what happened has to call immediately the person in charge of first aid and identify the location and other information useful to give first aid to the injured person. The Site Manager or other person in charge must be immediately informed; in order to manage the emergency giving the aid instructions in relation with the injury occurred. If the injury is not serious, he will have to accompany the injured to the health centre, whose location must be identified in the site's documents, and to notify the emergency ward of the arrival, informing doctors of what happened and wounded's conditions.

In case of serious injury is necessary to provide clear and complete information to let the rescuers reach the accident site (address, telephone, the shortest road, reference points) and try to provide, at the time of first contact with rescuers, a fairly clear idea of what happened, the factor that caused the incident, which first medical aid has been provided and current places and wounded's conditions. Waiting for help the area must be kept clear and an

easy access way must be indicated. In case of accident it is important to call and inform the SDE organization.








First aid in case of injury: Evaluate as soon as possible if it is necessary someone else's help; avoid becoming a second victim: if there are other danger around the injured (electric discharge, gas fumes) before intervening all the necessary prevention and protection measures have to be taken; move the person from the accident place only if necessary or if there is imminent or continued danger without, however, submitting to the same risks; make sure of the injury: the type of injury (serious superficial, ...), part of the body affected, likely immediate consequences (fainting, cardiorespiratory failure, ...) make sure of the causes: single or multiple causes (falls, electrocution and fall, ...), physical or chemical agent (chip, in-toxication, ...) put in the most appropriate position (for survival) the injured and provide the first aid; reassure the injured person and explain what's going on trying to establish an atmosphere of mutual trust; maintain emotional stability in order to overcome the unpleasant aspects of an emergency situation and control the feelings of discomfort or distress that can derive from them.



What to do in case of accident?

The Contractor shall give instructions on what to do in case of an accident:

-  Phone number for the infirmary
-  Phone numbers of outside emergency services
-  Phone number of the guard post
-  Waiting at a meeting point to help guide outside first aiders to the accident site,
-  Etc.

Steps to follow in case of a serious or lethal accident

In case of a serious accident the Contractor or his/her representative must immediately call:

-  The HSE coordinator
-  The representative of the Project Owner
-  The Project Supervisor
-  The SPS Coordinator

He/she must also quickly inform the following entities:

-  French Labour Inspection
-  PPBBPW
-  RPFWH

13.2 Team's first aid kit

As a first aid measure a first aid bag will be located inside the lot as it is indicated in the drawings. This portable bag will contain the necessary elements to the right realization of the first aid assistances. The material of the bag will be checked periodically by the emergency responsible and the missing elements will be replaced.

The minimum contents of the first aids bag are the following:

- Hydrogen peroxide
- Sterile gauzes or bandages
- Cotton
- Bandages
- Tape
- Scissors
- Crow bill
- Surgical gloves and disposable
- Disinfectant soap
- insulation blanket



Next to the first aid bag a sign/poster with the information of the closer medical center and other information of interest related to other sanitary centers will be posted in a visible and accessible place. This poster will be made with waterproofing materials in order to keep the information visible.

EMERGENCY FIRST AID

ABC's OF IMMEDIATE FIRST AID ACTION

A Open the Airway **B** Check for Breathing **C** Check for Circulation

MOUTH TO MOUTH RESUSCITATION

- Place victim on his/her back. Open the airway by tilting the head back.
Head tip - Chin lift
- Place fingers of other hand under the bony part of the chin. Place your ear close to the victim's mouth and nose. Look at chest to check to see if it rises and falls. Listen and feel for about 5 seconds for air to be exhaled. Pinch nostrils shut and make a tight seal around victim's mouth. Blow for about 1 1/2 seconds per ventilation breaths.

CHOKING

If choking victim can cough, speak or breathe, do not interfere. Call a paramedic. IF VICTIM CANNOT BREATHE:

- Stand behind victim and put arms around victim's waist. Place a fist, placing thumb side against victim's abdomen, between navel and rib cage.
- Grasp fist with other hand and give 4-10 firm upward thrusts. Repeat until object is dislodged.

SEVERE BLEEDING

- Place clean compress over wound and apply direct pressure. Elevate limb if bleeding severely.
- When bleeding stops, apply pressure bandage. Do not roll off circulation by tying bandage too tightly.

FRACTURE

- Do not move victim.
- Elevate injured area.
- Treat for shock, being careful when handling injured area.

EYE INJURY

CHEMICAL BURNS OF THE EYE

- Flush eye with eye wash and saline solution or clear water for 15 minutes.

OBJECT IN THE EYE (PARTICLE):

- Do not rub eye.
- Put eyelid over eye and hold to close tightly. There will normally cause object to wash free.
- If above procedure is unsuccessful, hold eyelid up and have victim look downward.
- Place a cotton tip applicator horizontally across the eyelid and hold back over skin.
- Carefully remove object with Eye Magnet Loop or sharp, clean cloth.

ELECTRIC SHOCK

- Remove victim from source of shock using stick or other non-conductive object.
- Begin mouth to mouth resuscitation if breathing has stopped.
- Call for medical assistance promptly.

SHOCK DUE TO INJURY

- Clear the airway.
- If the face is pale, elevate the feet.
- If the face is red, elevate the head and shoulders.
- Keep the victim warm.

YOUR LOCATION

FOR LOCAL SALES AND SERVICE

EMERGENCY TELEPHONE NUMBERS

Paramedic _____
 Police _____
 Fire _____
 Doctor _____
 Poison Control Center _____

This sign is a compilation of general first aid information obtained from sources believed to be reliable. However, there is no guarantee as to the medical validity of the information or the results obtained from using said information. This does not represent that every acceptable safety procedure is contained herein, or that approved or unapproved circumstances may not warrant or require further or additional procedures.

13.3 Preventive medicine

Before the assembly and disassembly work a warm up and stretching session will be held, to avoid the overload of muscle groups used in the work or muscle problems associated with it.

A medical kit with standard medication such as painkillers, circulation support drops, charcoal tablets, magnesium and other medicine will be carried along as a preventive Versailles competition pharmacy". Team members can also store their own medication in it. Should a person require acute medication, e.g. because of allergies or diabetes, the security manager will be informed about that before the stay in Versailles. A list with respective information about the concerned team members will also be kept in this kit. Thus, in case of emergency, the supply with the suitable personal medication is ensured and a fast and competent reaction is guaranteed in urgent situations such as e.g. allergic shocks.

13.4 Accident victims evacuation

In case of emergency, such as an injury, fire or spill of potentially risked material, the only issue of importance is the health and safety of the individual(s) at risk.

Improperly prepared or trained rescuers can endanger themselves and those they are trying to rescue. Leave rescuers work to trained professional responders who are equipped for emergency situations, unless it is absolutely necessary to do otherwise. In case of Emergency:

- In the event of an accident necessitating more than standard first aid, call 112 and notify team and competition organizers as soon as possible
- Tell the dispatcher the workplace location and the nature of the emergency.
- Quickly verify safe access to the victim (check for exposed electrical wires, damaged or unstable flooring around victim, noxious fumes or explosive gas, etc...) so that rescuers do not become victims as well.
- If you can reach the victim, administer proper first aid if required and trained.
- Do not move the victim unless there is a need to evacuate the space.
- First responders should clear a path to the victim. Others should direct emergency personnel to the scene.
- Assist professional medical responders when they arrive.

- Inform the victim's supervisor. After professional emergency personnel have arrived and the victim has received necessary medical attention, the supervisor should document accident area with photographs and written descriptions.
- Supervisor should complete an injury report.

14. Risk identification for possible later works

The possible later works risks will be identified and included in HS Plan, the activities of maintenance are included in the ANNEX B. Any concerns regarding compliance to SDE rules will be brought to the attention of the Safety Officer or Faculty member present. At this time the team will assess the importance of the concern to determine proper steps to remediate the problem.

Once all construction operations are complete, our team will conduct a final cleaning of the house.

During this time the interior and exterior will be cleaned. All workers involved in these activities will exercise caution when working with cleaning products to avoid ingestion into eyes or mouth. All cleaning products materials will be environmentally friendly.

Any work needing to take place beyond cleaning will result in stopping tour traffic and following normative.

- PV panels may be cleaned via the ends of the house.
- Decks may be swept of debris with debris disposed of properly.
- Any electrical work will follow proper lockout/tag out procedures per standard electrical code, standard normative.
- Any plumbing work will follow proper lockout/tag out procedures for associate pumps and follow standard plumbing code for all repairs.

Ladders and tools will be stored on site to facilitate this process. Any ladders or tools used during maintenance, drawing logistics in lot. Our site will be cleaned thoroughly at the end of every shift and kept clean during work.

Wet area signs will be used until all surfaces are dry and suitable for general access.

Any chemicals used during cleaning will be labelled and used according to the manufacturers guidelines.

15. Useful plans and information for possible later works

In general, these will be the adopted preventive and protection measures in the possible later works:

- Any repairing or maintenance work will be correctly indicated and the affected zones will be protected with fences to stop the way of non workers people.
- There will be taken the individual and collective protections appropriate to the works to execute and that guarantee the conditions of Health and Safety needed.

16. Adopted system for the level of health and safety control during the works

In order to satisfy compliance of safe procedures during the construction process, the team has adopted the following measures:

As indicated by the SDE Organization regarding each team internal organization, the team designated the following team officers:

Health & Safety Coordinator	<ul style="list-style-type: none"> • Rosa Prades • 635048245
Health & Safety Officers	<ul style="list-style-type: none"> • Noelia Pitach • 610916918
Name and number of first aid certificated worker 1	<ul style="list-style-type: none"> • Josep Lluís Doñate Franch • 651156434
Name and number of first aid certificated worker 2	<ul style="list-style-type: none"> •

At least one team officer that covers Health & Safety is present at all times during the assembly, maintenance and disassembly of the prototype.

This safety assessment and the procedures were carried out by the HS OFFICER during daily meetings and work-visits and control in coordination with the HS Coordinator and HS SDE Organization.

All of Team members and workers have received first aids training. At least one team officer that covers Health & Safety is present at all times during the assembly shifts, maintenance and disassembly shifts when collective

protections are installed in order to control the safety measures adopted and assure the correct install and usage

The team provides the individual protections equipment (PPE) to every team member in accordance with the possible risk as

During the construction process, every team member must include his identification and sign in the next table:

Regarding the èBRICKHOUSE by means of my signature, I declare:

- Equip VIA-UJI has provided me with the individual protections required (PPE), in accordance with the works I'm going to develop, and the possible risks associated. Those risks are indicated in this document.
- I have received enough information concerning the safe use of the PPE , its maintenance, storage and elimination procedure
- I have received enough information to immediately stop the works and ask for a new PPE , in the case they are damaged.

17. Formation and information about health and safety

For our team the successful of the labor risks prevention is based in the training and information of the workers in safety and health for that they can finish their work without accidents or incidents.

Equip VIA-UJI, through its control, all the subcontractor employers and self-employed workers are legally bound to train all their workers in order to achieve a safety work. In this way, all the workers might know:

- The own risks of their labor activity.
- The procedures of safety work that they must follow.
- The correct use and respect of the collective protection.
- The correct use of the obligatory equipment of individual protection for their work.
- Adopted measures in first-aids, fire-fighting and evacuation.

Training on Safety and Health must be delivered obligatory to all the workers, independently of their role played in the building work, the type of their contract or its duration.

All the workers will do the basic course of prevention of labour risk in the construction which it consist in 8 hours

Characteristics of the course:

- Basic and specific risks in the construction sector
- Prevention measures
- Emergency and First Aid
- Safety signs
- Fire protection
- Emergency and evacuation plans

The course will be recognized by the “fundación Laboral de la Construcción”

Also meetings will be held health and safety every day of the assembly and disassembly will be given guidelines on PRL before the execution of the tasks prior to start work to avoid overexertion during the load and movements of heavy charges there will be adopted

The instructions for engineer, drivers, maintenance personnel or other similar personnel, a part of the aforementioned, must include the following: restrictions of use and operation, verification and maintenance of the equipment. These instructions should appear in written form at the machinery or work equipment, always it is possible.

The entrepreneurs must justify that their workers are training in Labor Risks Prevention, that they know the hazards and risks derived from their work, preventing measures, collective protection means, individual protection means and procedures of safety work for the machinery and tasks that they will develop.

The licenses and authorizations to drive machinery and operate them must be in effect and documented.

- Crane license.
- Forklift license.
- Driver license.
- Authorization to operate lift platforms.

The coordinators at the building work must inform the team about:

- The results of the assessments and controls of labor environment of their labor activities, as well as the data of their state of health related to the risks they are exposed to.
- The risks for their health related with their work, as well as the technical prevention or emergency measures that have been approved or must be approved.

- The existence of serious and imminent risks that could affect the workers, as well as the adopted dispositions or those which must be adopted related to protection, including the evacuation of their work position.
- Their right to stop their activity in the case that, under their point of view, exists serious e imminent risks for the health and they cannot contact immediately to their superior; or in the case that they have advised about the risks but any corrective measures have been adopted.

This information must be given personally to the team, during the work hours or at any other time. In all cases, it will be considered as working hours.

Regarding the éBRICKHOUSE by means of my signature, I declare:

- Equip VIA-UJI has informed me about the work I'm going to develop
- I have received information about the possible risks associated to the works
- I have received training in order to develop safe work procedures, and to avoid or resolve the risks associated
- I have received training concerning the Collective Protections to use, its correct usage and its maintenance procedure

18. Emergency evacuation plan during the assembly and disassembly periods

In case of emergency during the assembly or disassembly it will be easy to get out of the prototype because there are two ways to exit.

For work on the roof, there will be a permanent means of access that can permit to escape rapidly from the roof.

During the competition, it must be possible to open the main entrance and the door of the greenhouse, when people are in the house.

During the evacuation, a team member will be in charge of preventing people from going in the good direction.

Inside the house, we will ask people to leave the house without precipitation and calmly to avoid any risk of falling, after we will verify that the house is empty.

Outside the house, we will ask people to move away from the house without precipitation and calmly too and come around the entry of La Cite Du Soleil.

PROTOCOL OF ACTIONS IN CASE OF ACCIDENT

This protocol will be stored in the lot in the corresponding place to know how to act in case of accident. The basic actions are:

- Protect the victim and the rest of people from the origin of the accident
- Notify: ask for help via phone
- Help using the first aid techniques

The basic first aid steps are the following:

- Work to remove any individuals from situations involving additional danger
- Call appropriate response teams: 112 in case of Emergency
- Maintain control of the environment and prevent further injuries until professional help arrives.
- Notify the SD Organizers including available public safety organizers.

PLANNED PROTOCOL OF ACTION IN CASE OF FIRE:

This protocol will be stored in the lot in the corresponding place to know how to act in case of fire. The actions are:

- Act the alarm
- Assist persons in immediate danger, only if safe to do so.
- Restrict access to the danger areas, only if safe to do so.
- Phone 112, giving the operator clear details of location and incident.
- Attend to the emergency, only if it is safe to do so.
- Evacuate to the nominated assembly area.
- Remain at assembly area and ensure everybody is accounted for

In case of small-scale fire, fire extinguishers from the interior, floor or exterior areas will be used to extinguish the fire. Fire blankets will be used in case of people caught fire, these blankets will be stored in the house.

The building will have one portable fire extinguisher; this extinguisher must meet the following requirements: air pressurized water, 6 liters capacity and 21A -113B efficiency.

Additionally, a CO₂ fire extinguisher must be available next to the electrical board. Approved smoke detectors must be functional in the two main rooms of the house

In case of large-scale fire, we will call the fire department immediately and will notify the organization to avoid any risk.

TELEPHONE NUMBERS OF EMERGENCY:

Emergency: **112**

Local Police, Gendarmerie: **17**

Fire Department: **18** poste fixe – Portable: **112**

Ambulance: **15**

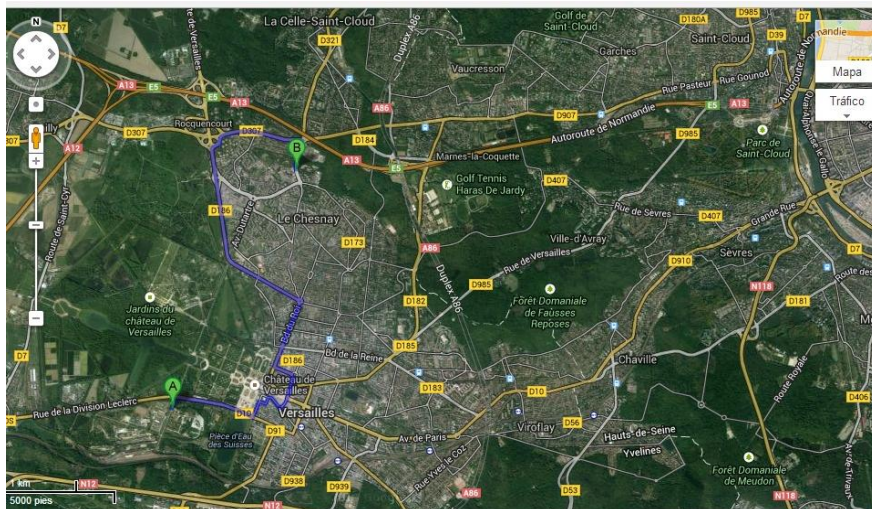
Police: **17**

Nearest Hospital:

CHU de Versailles,

117, rue de Versailles,

78157 LE CHESNAY



19. Technical data sheets of all dangerous products that will be used on site.

Paint: data sheet not available

ANNEX 1: IDENTIFICATION OF RISKS AND EVALUATION OF THE EFFICIENCY OF THE ADOPTED PROTECTIONS

Name: Risk generated by others

Date: During all the process

Risks identification and level of importance

- Trapped by turned over machines, tractors or vehicles
- Run over or hit by vehicles
- Knocked by objects or tools
- Collide with objects in motion



Collective protection:

- ✓ Cones and ribbons
- ✓ First aid bag
- ✓ Site limit with permanent fences

Prevention procedure:

- ✓ Circulation on the places reserved for such activity.
- ✓ Pay special attention to crossing, when coming out of demarcated areas towards non demarcated areas, near places with heavy machinery, areas with low visibility, etc.
- ✓ No running.
- ✓ No jumping of any fences or any other object meaning a demarcation.
- ✓ Warn the workers near you of your presence.
- ✓ Pay attention to signals.

Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket



Name: Risk generated by environment. Wind

Date: During all the process

Risks identification and level of importance

- Falling materials
- Fall from the deck
- Be hit with any material of construction
- Visibility problems



Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent

Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket



Prevention procedure:

- ✓ Stop work if the wind is too strong (>45KM/H)
- ✓ Safety glasses
- ✓ Protection from falls by persons and from falling objects in the upper part of the retaining walls
- ✓ Protection from falls from heights and from falling objects onto traffic areas and onto work platforms

Name: Risk generated by environment. For extreme heat

Date: During all the process

Risks identification and level of importance

- Sunburn
- Deshydration
- Heat-Stroke
- Insulation

Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Marked areas for stock

Prevention procedure:

- ✓ Wear pale colors and 100% cotton clothes. Long-sleeve shirts and long trousers.
- ✓ Wear ample but light and light-coloured clothing which allows sweat to evaporate.
- ✓ Protect your head from the sun
- ✓ Avoid or reduce too much physical exertion
- ✓ Remember to turn off any electrical Regularly
- ✓ For those parts of the body directly exposed to the sun, use sun protection, and apply it frequently (several times per day)
- ✓ Try work in shade places if it is possible

Sings

SafeStocks



Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket

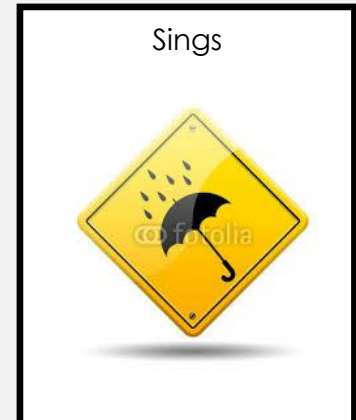


Name: Risk generated by environment. Heavy rain or rain of long-term
the process

Date: During all

Risks identification and level of importance

- Sliding (scale, scaffolding.)
- Electric shock due to humidity (electric tools)
- Degradation of the land



Collective protection:

- ✓ Cones and ribbons
- ✓ First aid bag
- ✓ Tent
- ✓ Marked areas for stock

Prevention procedure:

- ✓ Use anti-slide mats on slipping surfaces
- ✓ Regularly remove water from the floor with scrapers
- ✓ Replacement of defective cables
- ✓ Waterproof plugs
- ✓ Protective Clothes

Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket



Name: Risk generated on others

Date: During all the proces

Risks identification and level of importance

- Trapped by turned over machines, tractors or vehicles
- Knocked by objects or tools
- electrocution
- Collide with objects in motion

Collective protection:

- ✓ Cones and ribbons
- ✓ First aid bag
- ✓ Site limit with permanent fences

Prevention procedure:

- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
- ✓ Knowledge of the HS plan for all staff
- ✓ Specify the nature of goods carried in each box and the attachment points of each box
- ✓ Controlling the movements of the load with four long lines in it corners
- ✓ Controlling that workers are away of the load
- ✓ Working in shifts
- ✓ Keeping the lot clean and in order in every moment

Signs



Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket



Name: Self generated risks

Date: During all the process

Risks identification and level of importance

- Overexertion



Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag

Individual protection equipment:

- ✓ Security boots



- ✓ Gloves



- ✓ hard hat



- ✓ reflective jacket



Prevention procedure:

- ✓ Training exercises before and after the shift
- ✓ Have a good a physical condition
- ✓ Prohibition of carrying loads in excess of 20 kg for men and 15 kg for girls
- ✓ Proper posture to carry load

Risks identification and level of importance

- Knocked by objects or tools
- Trapped by or between objects
- Overexertion
- Fall of persons of the same level
- Fall of objects because of manipulation
- Fall of objects because they came loose
- Collide with objects in motion
- Trapped by turned over machines, tractors or vehicles
- Run over or hit by vehicles
- "in itinere"



Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Marked areas for stock

Prevention procedure:

- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
- ✓ Knowledge of the HS plan for all staff
- ✓ Specify the nature of goods carried in each box and the attachment points of each box
- ✓ Controlling the movements of the load with four long lines in its corners
- ✓ Controlling that workers are away of the load
- ✓ Working in shifts
- ✓ Keeping the lot clean and in order in every moment
- ✓ Site limit with permanent fences

Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat

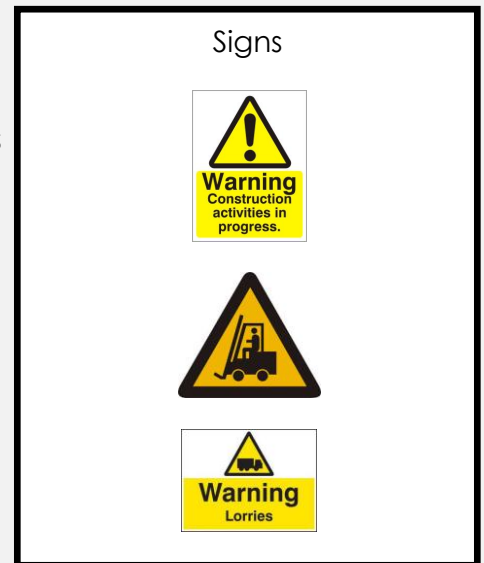


✓ reflective jacket







Risks identification and level of importance

- Overexertion
- Knocked by objects or tools
- Trapped by turned over machines, tractors or vehicles
- Trapped by or between objects
- Fall of persons of the same level
- Fall of persons on the different level
- Fall of objects because they came loose
- Run over or hit by vehicles
- "in itinere"
- Collide with objects in motion
- Fall of objects because of manipulation



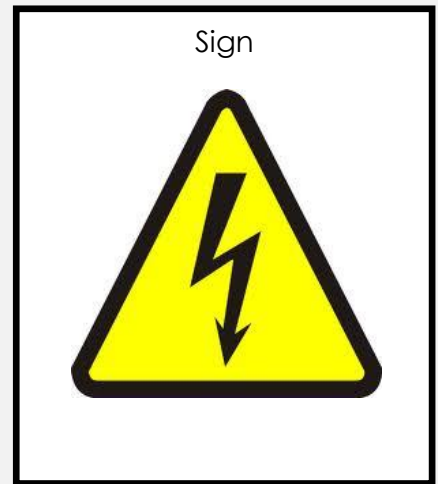
- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 



- Prevention procedure:
- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
 - ✓ Knowledge of the HS plan for all staff
 - ✓ The speed of trucks will adapt to the step of a man, one person must walk in front of the truck, and another person must walk behind the truck.
 - ✓ They must direct the movements of the trucks, establish the maximum speed of the vehicles and avoid the accidents with people, with the rest of vehicles and/or with the different elements
 - ✓ Driver license
 - ✓ Previous analysis of the truck's movement between the HS Team Coordinator and the driver

Risks identification and level of importance

- Exposure to electric connections
- Knocked by objects or tools
- Trapped by or between objects
- fire
- Overexertion
- Fall of persons of the same level
- Fall of objects because of manipulation
- Fall of objects because they came loose



- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves against electrical risks 
 - ✓ hard hat 
 - ✓ reflective jacket 





- Prevention procedure:
- ✓ All the works must be done with no voltage in the circuits
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Connection to electrical panel will be set up by a skilled circuits
 - ✓ Keeping the lot clean and in order in every moment
 - ✓ All the works must be done no voltage in the circuits

Risks identification and level of importance

- Knocked by objects or tools
- Trapped by or between objects
- Overexertion
- Fall of persons of the same level
- Fall of objects because of manipulation
- Fall of objects because they came loose
- Collide with objects in motion
- Trapped by turned over machines, tractors or vehicles
- Run over or hit by vehicles
- "in itinere"



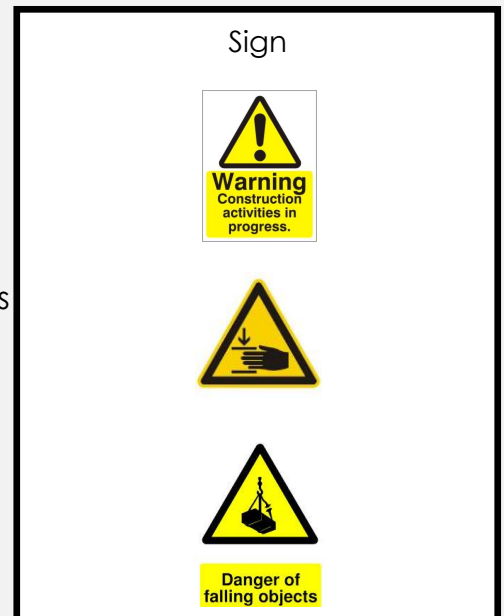
- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for stock

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 





- Prevention procedure:
- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Specify the nature of goods carried in each box and the attachment points of each box
 - ✓ Working in shifts
 - ✓ Keeping the lot clean and in order in every moment

Risks identification and level of importance

- Fall of objects because they came loose
- Collide with objects in motion
- Trapped by or between objects
- Fall of objects because of manipulation
- Knocked by objects or tools
- Trapped by turned over machines, tractors or vehicles
- Fall of persons of the same level
- Fall of persons on the different level
- Run over or hit by vehicles
- "in itinere"
- Overexertion



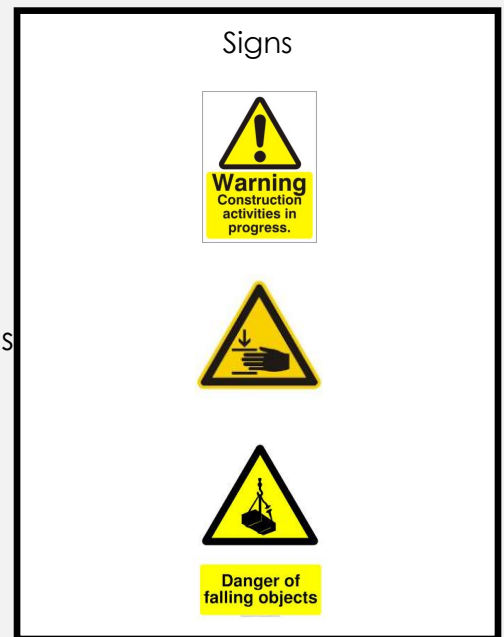
- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for stock

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 





- Prevention procedure:
- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Previous analysis of the crane's movements between the HS Team Coordinator and the crane operator
 - ✓ Guide the crane operator by walkie talkie
 - ✓ Specify the nature of goods carried in each box and the attachment points of each box
 - ✓ Controlling the movements of the load with four long lines in it corners
 - ✓ Controlling that workers are away of the load
 - ✓ Working in shifts
 - ✓ Crane operator license

Risks identification and level of importance

- Fall of objects because they came loose
- Collide with objects in motion
- Trapped by or between objects
- Fall of objects because of manipulation
- Knocked by objects or tools
- Trapped by turned over machines, tractors or vehicles
- Fall of persons of the same level
- Fall of persons on the different level
- Run over or hit by vehicles
- "in itinere"
- Overexertion



- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 






- Prevention procedure:
- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Previous analysis of the crane's movements between the HS Team Coordinator and the crane operator
 - ✓ Guide the crane operator by walkie talkie
 - ✓ Specify the nature of goods carried in each box and the attachment points of each box
 - ✓ Controlling the movements of the load with four long lines in it corners
 - ✓ Controlling that workers are away of the load
 - ✓ Working in shifts
 - ✓ Crane operator license

Risks identification and level of importance

- Fall of objects because they came loose
- Collide with objects in motion
- Trapped by or between objects
- Overexertion
- Fall of objects because of manipulation
- Knocked by objects or tools
- Trapped by turned over machines, tractors or vehicles
- Fall of persons of the same level
- Fall of persons on the different level
- Run over or hit by vehicles
- "in itinere"



- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Marked areas for stock

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 
 - ✓ safety glasses 





- Prevention procedure:
- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Specify the nature of goods carried in each box and the attachment points of each box
 - ✓ Controlling the movements of the load with four long lines in it corners
 - ✓ Controlling that workers are away of the load
 - ✓ Keeping the lot clean and in order in every moment
 - ✓ Site limit with permanent fences
 - ✓ Test lifting before lifting the glass panels

Risks identification and level of importance

- Fall of persons on the different level
- Knocked by objects or tools
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level
- Fall of objects because they came loose
- Run over or hit by vehicles
- Overexertion
- Collide with objects in motion
- "in itinere"
- Trapped by turned over machines, tractors or vehicles



- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for stock

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 

- Prevention procedure:
- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Scaffolding operator license
 - ✓ Working in shifts

Risks identification and level of importance

- Fall of persons on the different level
- Fall of objects because they came loose
- Exposure to electric connections
- Knocked by objects or tools
- Trapped by or between objects
- fire
- Overexertion
- Fall of persons of the same level
- Fall of objects because of manipulation
- Fall of objects because they came loose



Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Site limits with fences
- ✓ Marked areas for stock

Prevention procedure:

- ✓ All the works must be done with no voltage in the circuits
- ✓ Knowledge of the HS plan for all staff
- ✓ Connection to electrical panel will be set up by a skilled circuits
- ✓ Keeping the lot clean and in order in every moment
- ✓ All the works must be done no voltage in the

Individual protection equipment:

- ✓ Security boots
- ✓ Gloves against electrical risks



✓



- ✓ hard hat



- ✓ reflective jacket



- ✓ security harness

Risks identification and level of importance

- Fall of persons on the different level
- Fall of objects because they came loose
- Knocked by objects or tools
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level
- Overexertion

Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Site limits with fences
- ✓ Marked areas for stock

Prevention procedure:

- ✓ All the works must be done with no voltage in the circuits
- ✓ Knowledge of the HS plan for all staff
- ✓ Connection to electrical panel will be set up by a skilled circuits
- ✓ Keeping the lot clean and in order in every moment

Signs



Individual protection equipment:

- ✓ Security boots



- ✓ Gloves



- ✓ hard hat



- ✓ reflective jacket



- ✓ security harness



Risks identification and level of importance

- overexertion
- Knocked by objects or tools
- Fall of persons of the different level
- Trapped by or between objects
- Fall of persons of the same level
- Fall of objects because of manipulation



Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Site limits with fences
- ✓ Marked areas for stock

Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket



Prevention procedure:





- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
- ✓ Knowledge of the HS plan for all staff
- ✓ Specify the nature of goods carried in each box and the attachment points of each box
- ✓ Working in shifts
- ✓ Keeping the lot clean and in order in every moment

Risks identification and level of importance

- Trapped by or between objects
- Fall of objects because of manipulation
- Fall of objects because they came loose
- Collide with objects in motion
- Knocked by objects or tools
- Trapped by turned over machines, tractors or vehicle
- Fall of persons of the same level
- Fall of persons on the different level
- Run over or hit by vehicles
- "in itinere"
- Overexertion



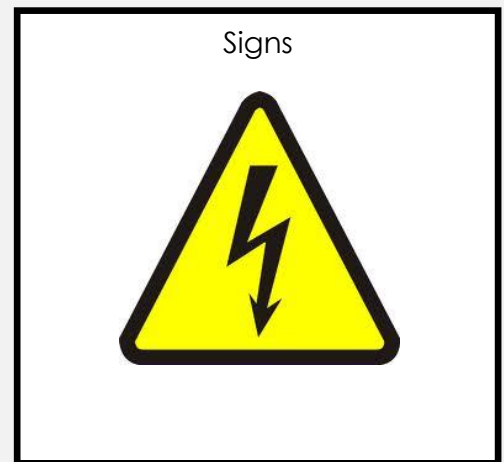
- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for stock

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 





- Prevention procedure:
- ✓ Prohibition of carrying loads in excess of 20 kg for men, 15 kg girls
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Previous analysis of the crane's movements between the HS Team Coordinator and the crane operator
 - ✓ Specify the nature of goods carried in each box and the attachment points of each box
 - ✓ Working in shifts
 - ✓ All the works must be done no voltage in the

Risks identification and level of importance

- Exposure to electric connections
- Knocked by objects or tools
- Trapped by or between objects
- fire
- Overexertion
- Fall of persons of the same level
- Fall of objects because of manipulation
- Fall of objects because they came loose



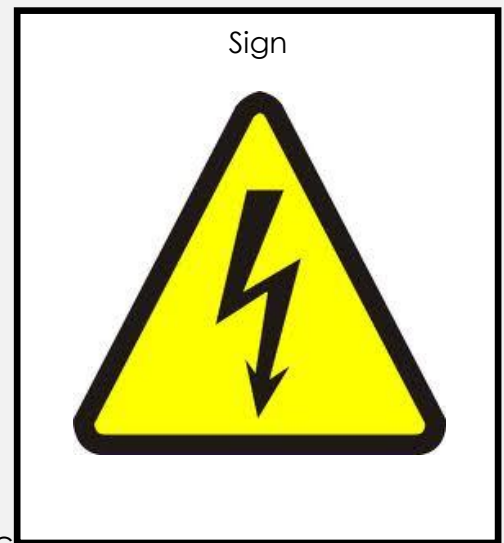
- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for stock

- Individual protection equipement:
- ✓ Security boots 
 - ✓ Gloves against electrical works 
 - ✓ hard hat 
 - ✓ reflective jacket 

- Prevention procedure:
- ✓ All the works must be done with no voltage in the circuits
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Connection to electrical panel will be set up by a skilled circuits
 - ✓ Keeping the lot clean and in order in every moment
 - ✓ All the works must be done no voltage in the circuits






Risks identification and level of importance

- Fall of persons on the different level
- Fall of objects because they came loose
- Knocked by objects or tools
- Exposure to electric connections
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level
- Overexertion
- Trapped by turned over machines, tractors or vehicles



- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for stock

- Prevention procedure:
- ✓ All the works must be done with no voltage in the circuits
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Connection to electrical panel will be set up by a skilled circuits
 - ✓ Keeping the lot clean and in order in every moment
 - ✓ All the works must be done no voltage in the circuits




- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves against electrical works 
 - ✓ hard hat 
 - ✓ reflective jacket 
 - ✓ security harness 

Risks identification and level of importance

- Fall of persons on the different level
- Overexertion
- Fall of objects because they came loose
- Knocked by objects or tools
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level
- Trapped by turned over machines, tractors or vehicles



- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 




- Prevention procedure:
- ✓ All the works must be done with no voltage in the circuits
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Connection to electrical panel will be set up by a skilled circuits
 - ✓ Keeping the lot clean and in order in every moment

Risks identification and level of importance

- Fall of persons on the different level
- Overexertion
- Knocked by objects or tools
- Fall of objects because they came loose
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level
- Trapped by turned over machines, tractors or vehicles



- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves 
 - ✓ hard hat 
 - ✓ reflective jacket 

- Prevention procedure:
- ✓ All the works must be done with no voltage in the circuits
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Keeping the lot clean and in order in every moment

Risks identification and level of importance

- Overexertion
- Fall of persons on the different level
- Knocked by objects or tools
- Fall of objects because they came loose
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level

Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Site limits with fences
- ✓ Marked areas for

Prevention procedure:

- ✓ All the works must be done with no voltage in the circuits
- ✓ Knowledge of the HS plan for all staff
- ✓ Keeping the lot clean and in order in every moment

Sign



Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket



Risks identification and level of importance

- Overexertion
- Fall of persons on the different level
- Knocked by objects or tools
- Fall of objects because they came loose
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level

Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Site limits with fences
- ✓ Marked areas for

Prevention procedure:

- ✓ All the works must be done with no voltage in the circuits
- ✓ Knowledge of the HS plan for all staff
- ✓ Keeping the lot clean and in order in every moment

Sign



Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat



✓ reflective jacket



ANNEX 2: IDENTIFICATION OF RISKS FOR POSSIBLE LATER WORKS

Name: CLEAN-UP THE HOUSE AND THE PLOT

Date: during all the competition

Risks identification and level of importance

- Overexertion
- Fall of persons on the different level
- Knocked by objects or tools
- Fall of objects because they came loose
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level

Collective protection:

- ✓ Cones and ribbons
- ✓ Drinking water
- ✓ First aid bag
- ✓ Tent
- ✓ Site limits with fences
- ✓ Marked areas for

Prevention procedure:

- ✓ All the works must be done with no voltage in the circuits
- ✓ Knowledge of the HS plan for all staff
- ✓ Keeping the lot clean and in order in every moment

Sign



Individual protection equipment:

✓ Security boots



✓ Gloves



✓ hard hat

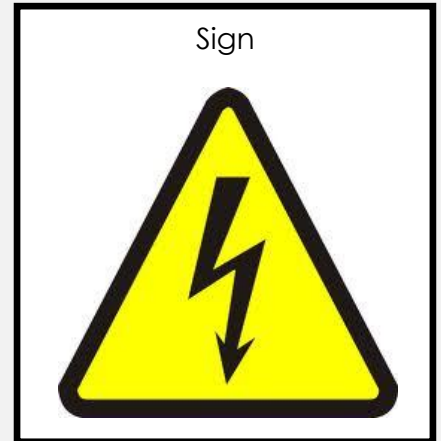


✓ reflective jacket








Risks identification and level of importance

- Fall of persons on the different level
- Fall of objects because they came loose
- Knocked by objects or tools
- Exposure to electric connections
- Fall of objects because of manipulation
- Trapped by or between objects
- Fall of persons of the same level
- Overexertion
- Trapped by turned over machines, tractors or vehicles

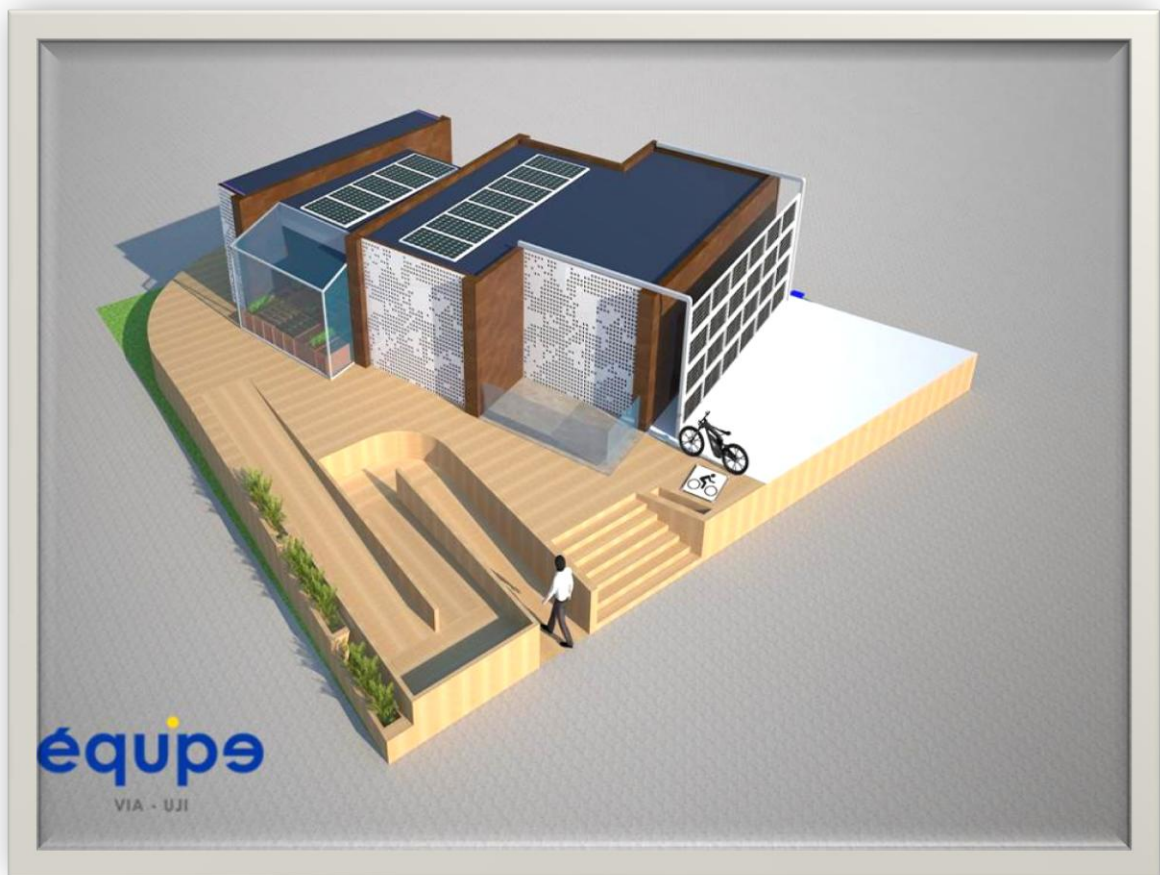


- Collective protection:
- ✓ Cones and ribbons
 - ✓ Drinking water
 - ✓ First aid bag
 - ✓ Tent
 - ✓ Site limits with fences
 - ✓ Marked areas for stock

- Prevention procedure:
- ✓ All the works must be done with no voltage in the circuits
 - ✓ Knowledge of the HS plan for all staff
 - ✓ Connection to electrical panel will be set up by a skilled circuits
 - ✓ Keeping the lot clean and in order in every moment
 - ✓ All the works must be done no voltage in the circuits

- Individual protection equipment:
- ✓ Security boots 
 - ✓ Gloves against electrical works 
 - ✓ hard hat 
 - ✓ reflective jacket 
 - ✓ security harness 

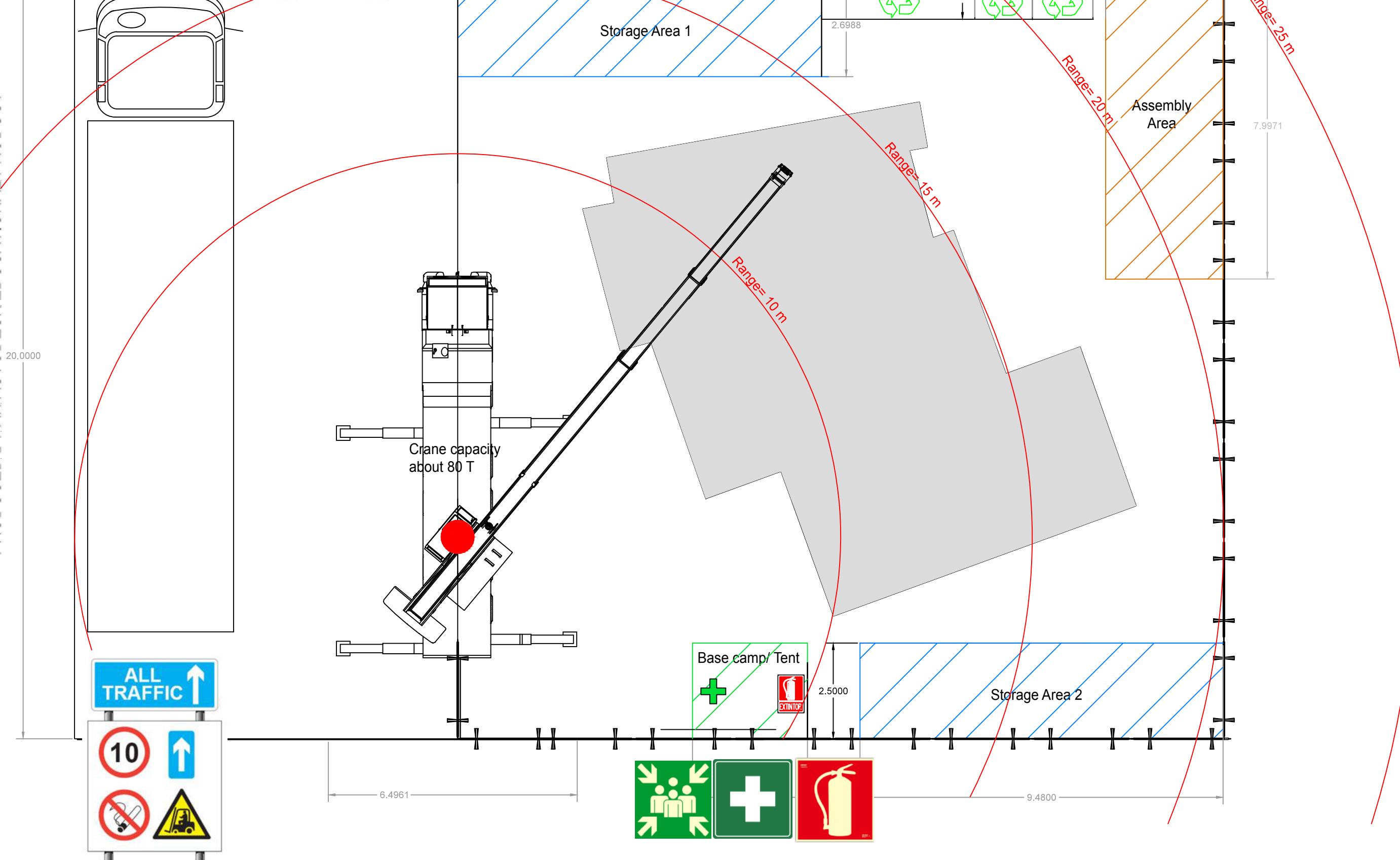
PROJECT DRAWINGS



SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



ALL TRAFFIC ↑

10 ↑

↑

⊘

⚠

HS-001

éqipe
VIA - UJI
www.equipe.via.uji.es

eBRICKhouse

Solar Decathlon Europe 2014 EN FRANCE

DELIVERABLE : #4

SUBJECT :
Health and Safety in the lot and surroundings

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM
VIVANIA
SOLUCIONES CONSTRUCTIVAS

GOLD
butech.
PORCELANOSA Grupo

SILVER
Schneider Electric
Placo
SAINT-GOBAIN
ISOVER
SAINT-GOBAIN
rational
WINDOWS & DOORS
NILAN
OUTSTANDING INDOOR CLIMATE

DATE : 26/03/14

SCALE : 1:100

HS-001



DELIVERABLE : #4

SUBJECT :
Health and Safety during
the Outside Logistic

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 27/03/14

SCALE :

SIGNPOSING



Trapped by or between objects



Fall of objects



Circulation way



Fall because of barriers



Back injury



Don't run on worksite



Don't made fire



Don't pass under load



Work site forbidden



First aid kit



Point of ressemblment



Fire extinguisher



General individual protections



Pants



Security shoes



Gloves



Hard hat



Noise-canceling
headphone



Safety (solar) goggles

DELIVERABLE : #4

SUBJECT :
Health and Safety during
the Inside Logistic

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



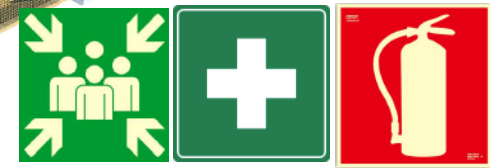
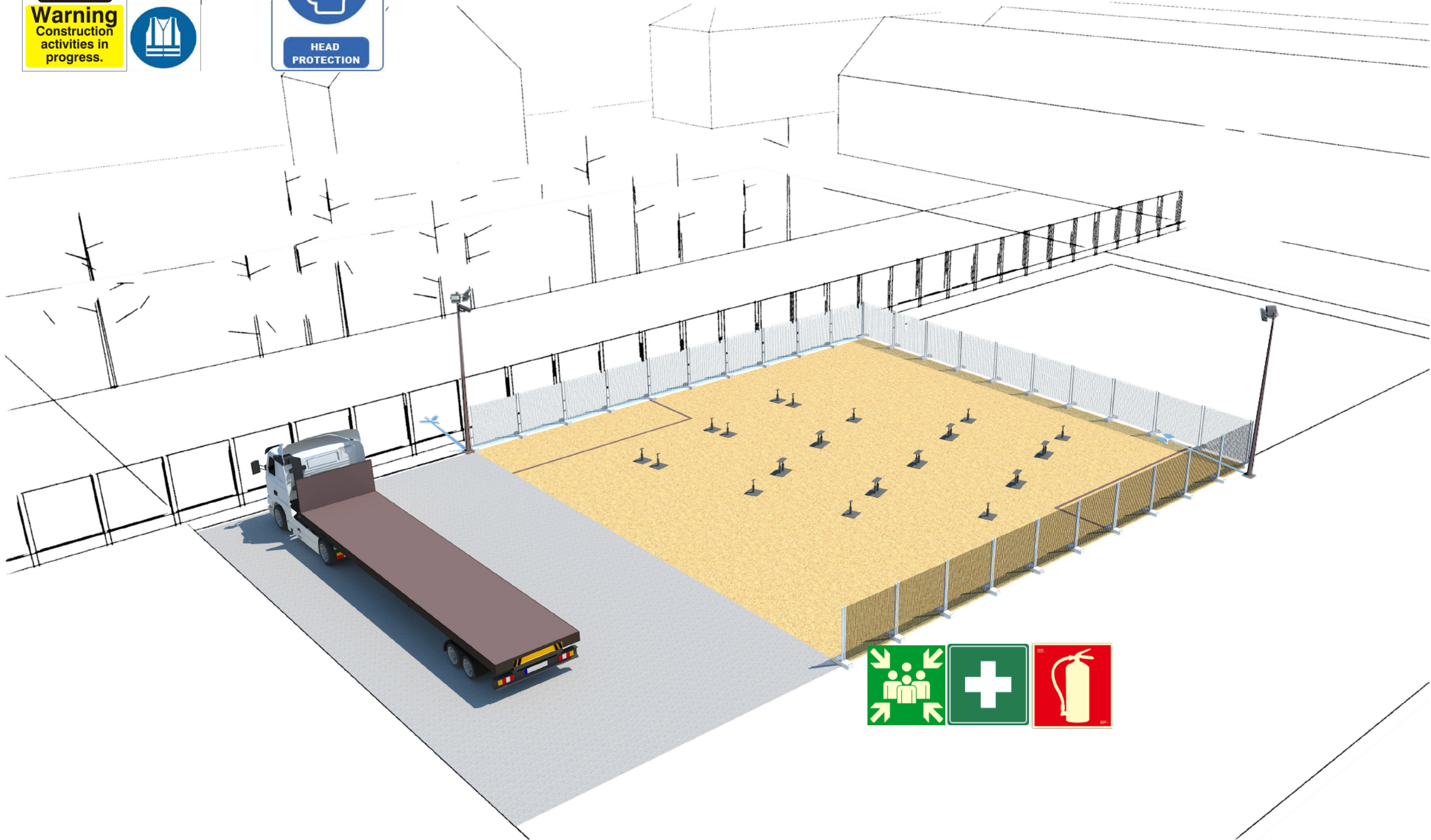
SILVER



DATE : 27/03/14

SCALE :

SITE SAFETY



DAY 1: Site preparation and foundation



MORNING

AFTERNOON

NIGHT

HS-401



www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 1 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

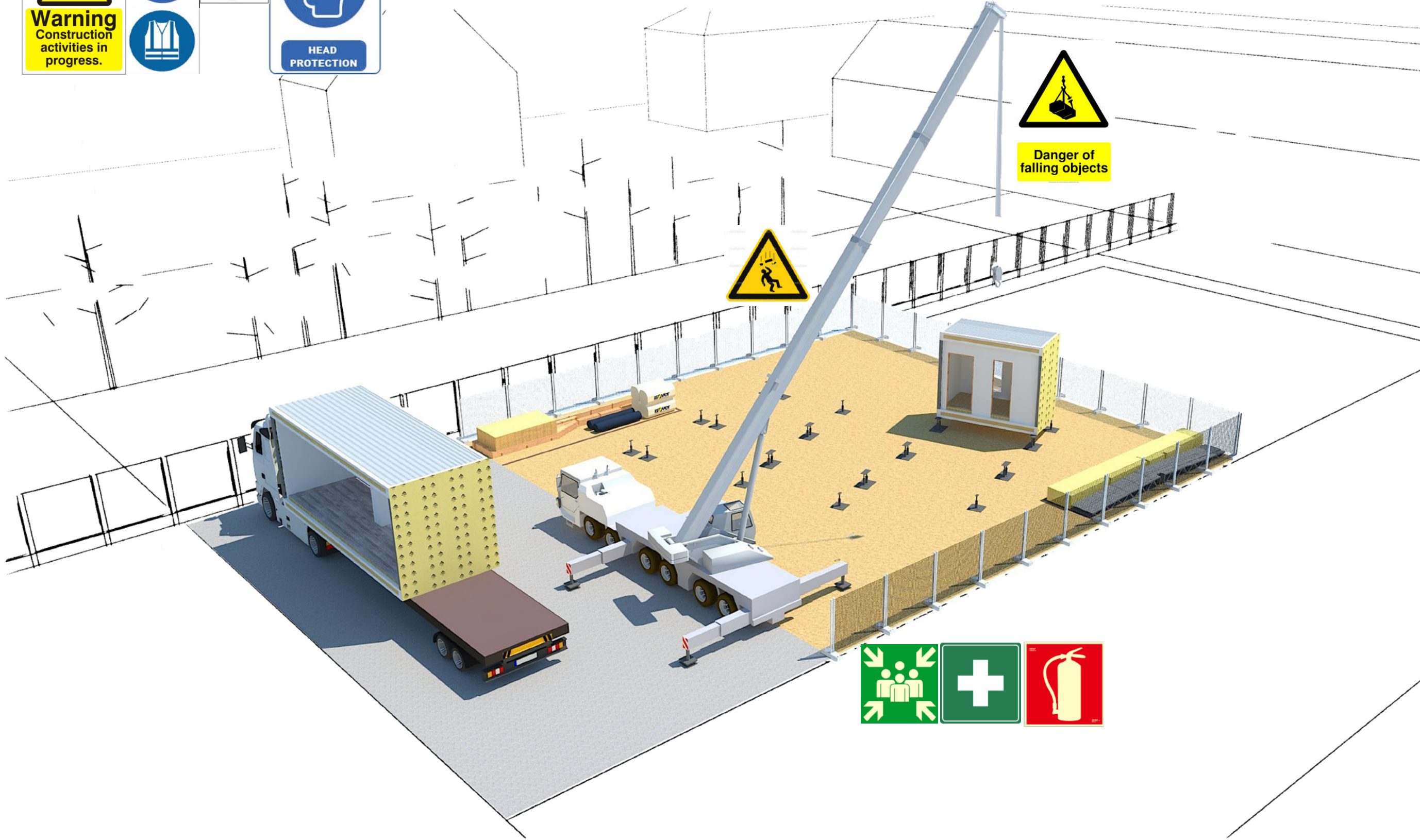
SCALE :

HS-401

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



DAY 2: Crane Operations



MORNING

AFTERNOON

NIGHT

HS-402

éqipe
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 2 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM
VIVANIA
SOLUCIONES CONSTRUCTIVAS

GOLD
butech.
PORCELANOSA Grupo

SILVER
Schneider
Electric



DATE : 26/03/14

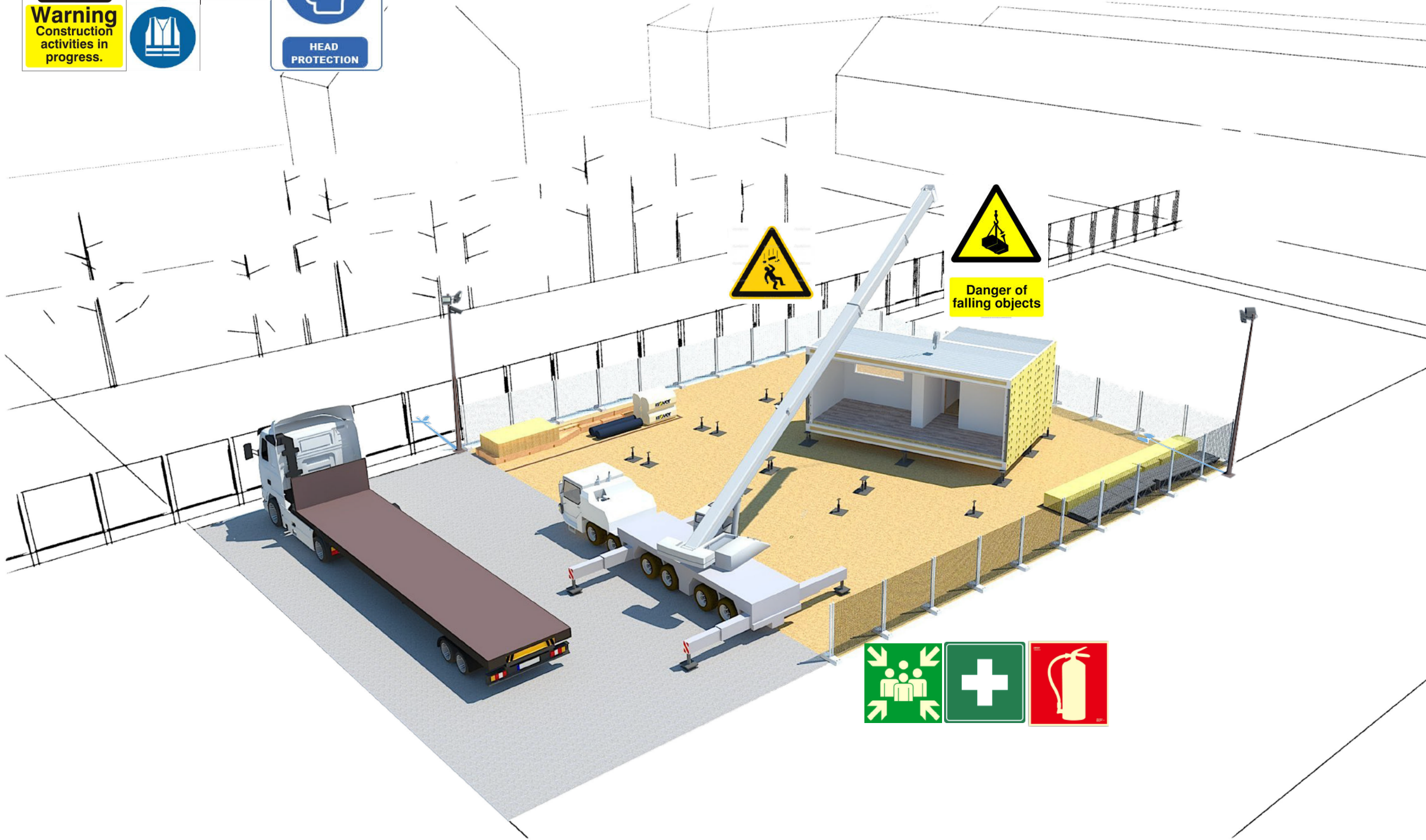
SCALE :

HS-402

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



Danger of falling objects

DAY 2: Crane Operations



MORNING

AFTERNOON

NIGHT

HS-403

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 3 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER

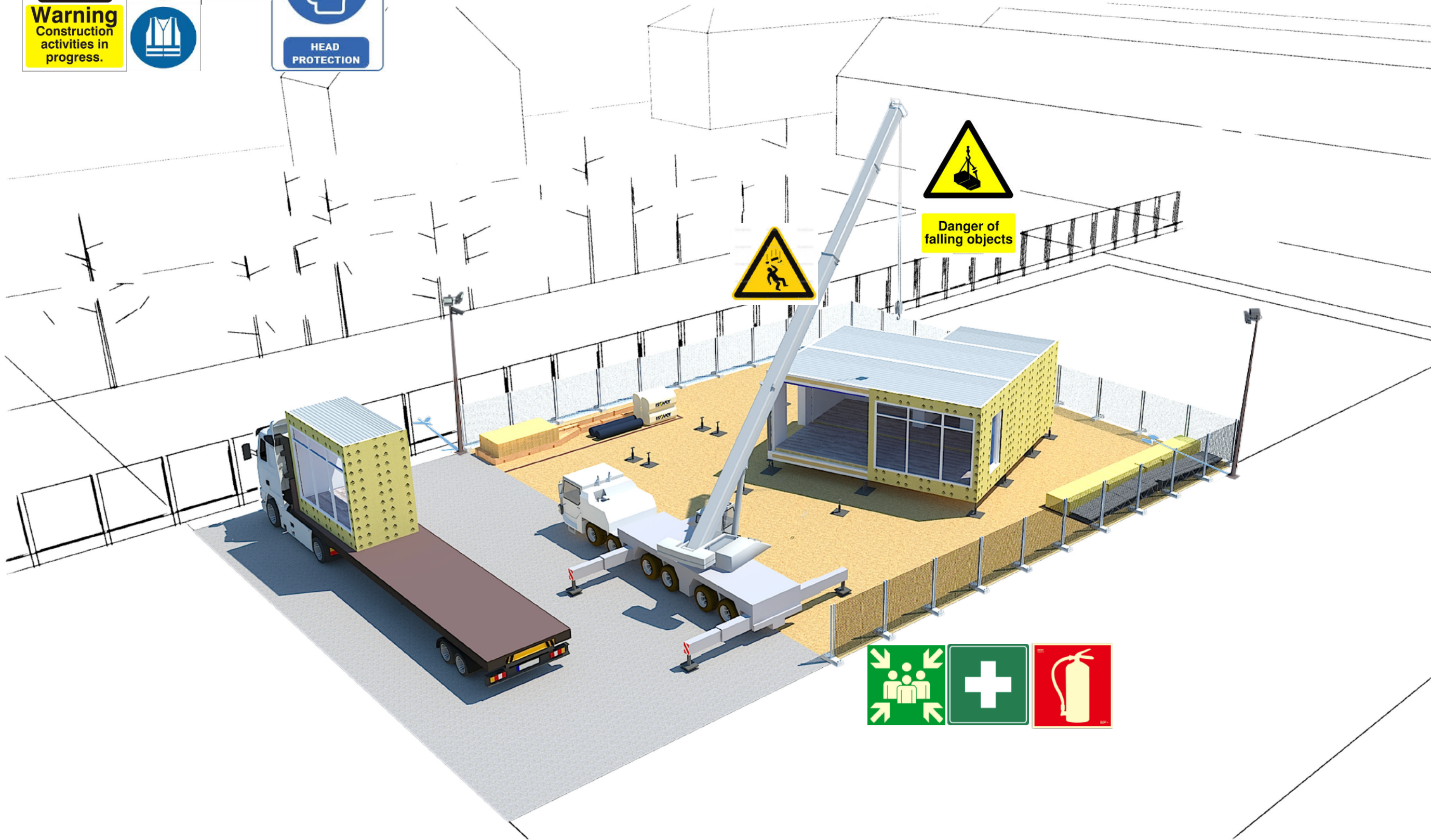
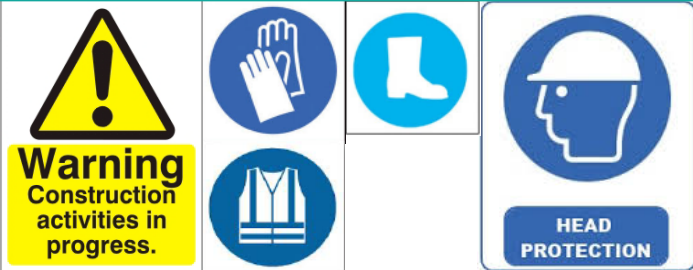


DATE : 26/03/14

SCALE :

HS-403

SITE SAFETY



DAY 2: Crane Operations



MORNING

AFTERNOON

NIGHT

HS-404

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 4 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

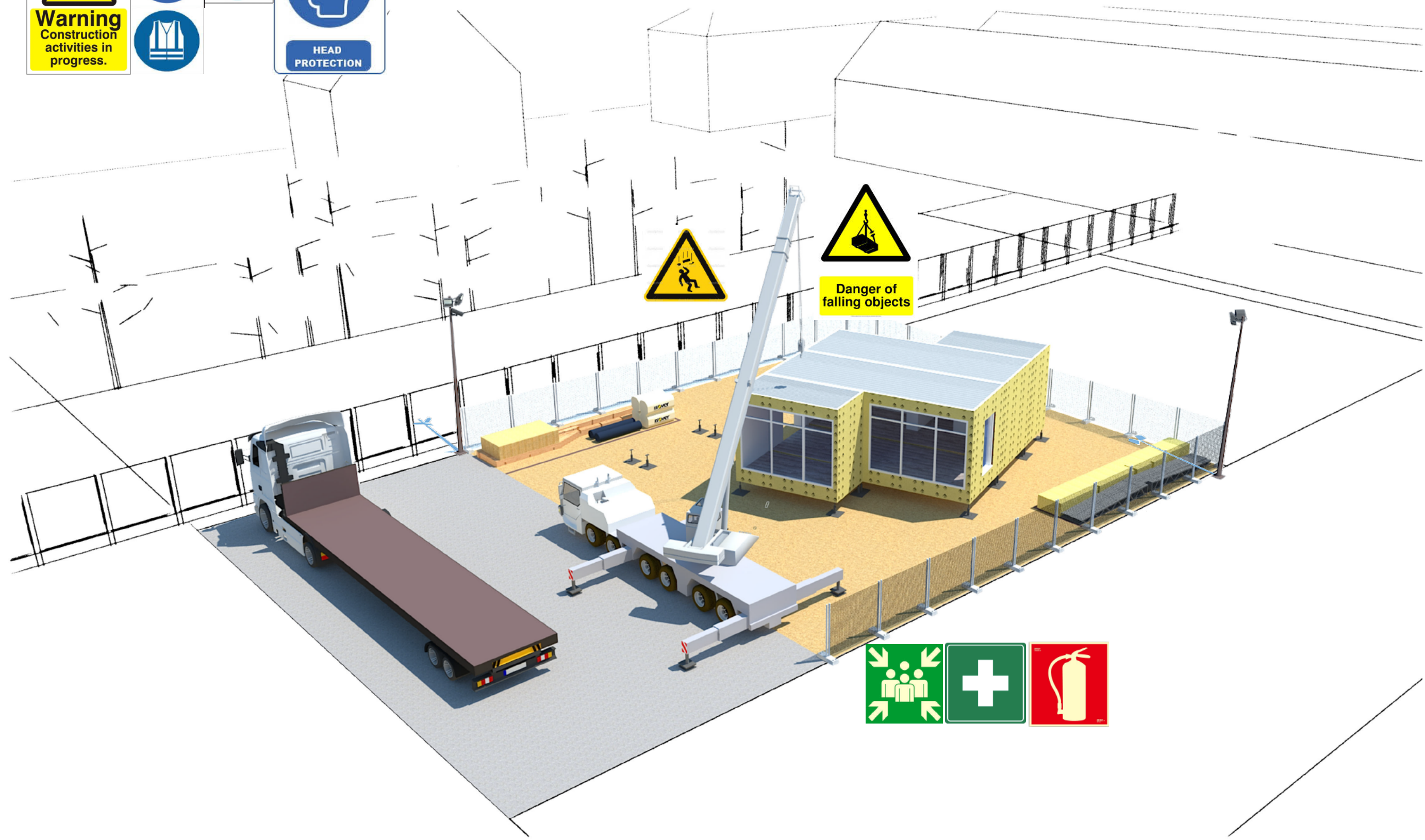
SCALE :

HS-404

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



Danger of falling objects

DAY 2: Crane Operations



MORNING

AFTERNOON

NIGHT

HS-405

éqipe
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 5 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM
VIVANIA
SOLUCIONES CONSTRUCTIVAS

GOLD
butech.
PORCELANOSA Grupo

SILVER
Schneider Electric

Placo
SAINT-GOBAIN

ISOVER
SAINT-GOBAIN

rational
WINDOWS & DOORS

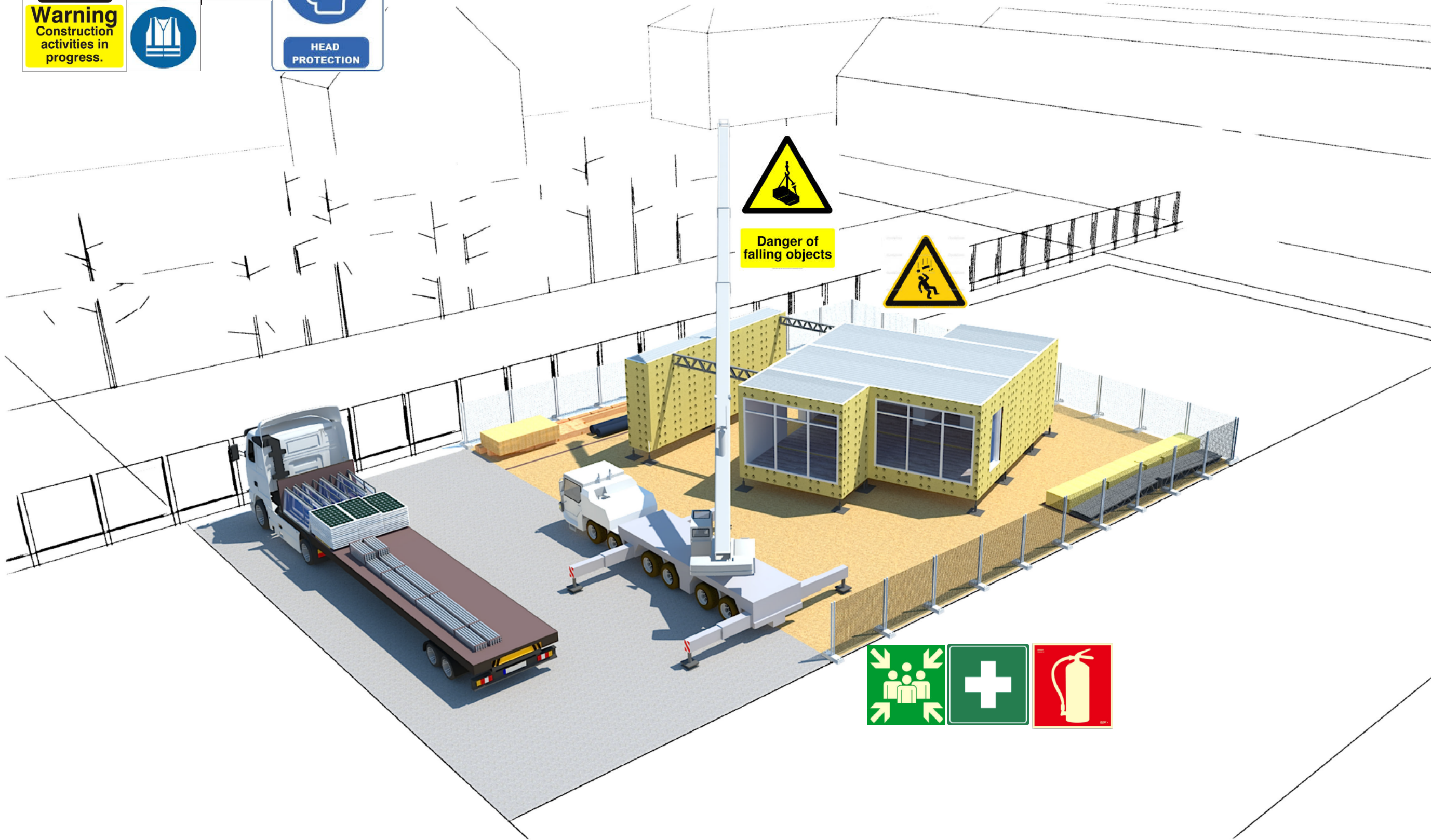
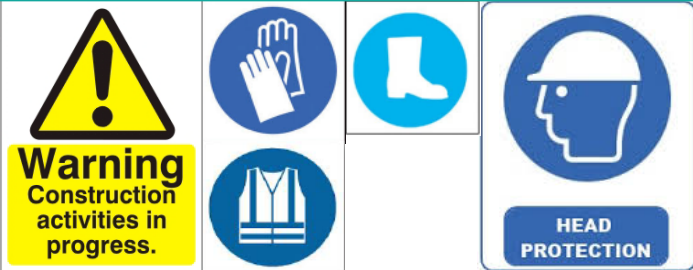
NILAN
OUTSTANDING INDOOR CLIMATE

DATE : 26/03/14

SCALE :

HS-405

SITE SAFETY



DAY 2: Crane Operations



MORNING

AFTERNOON

NIGHT

HS-406

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 6 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER

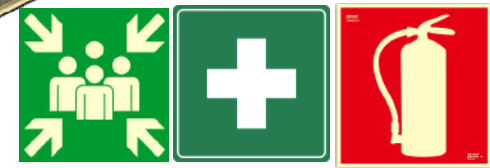
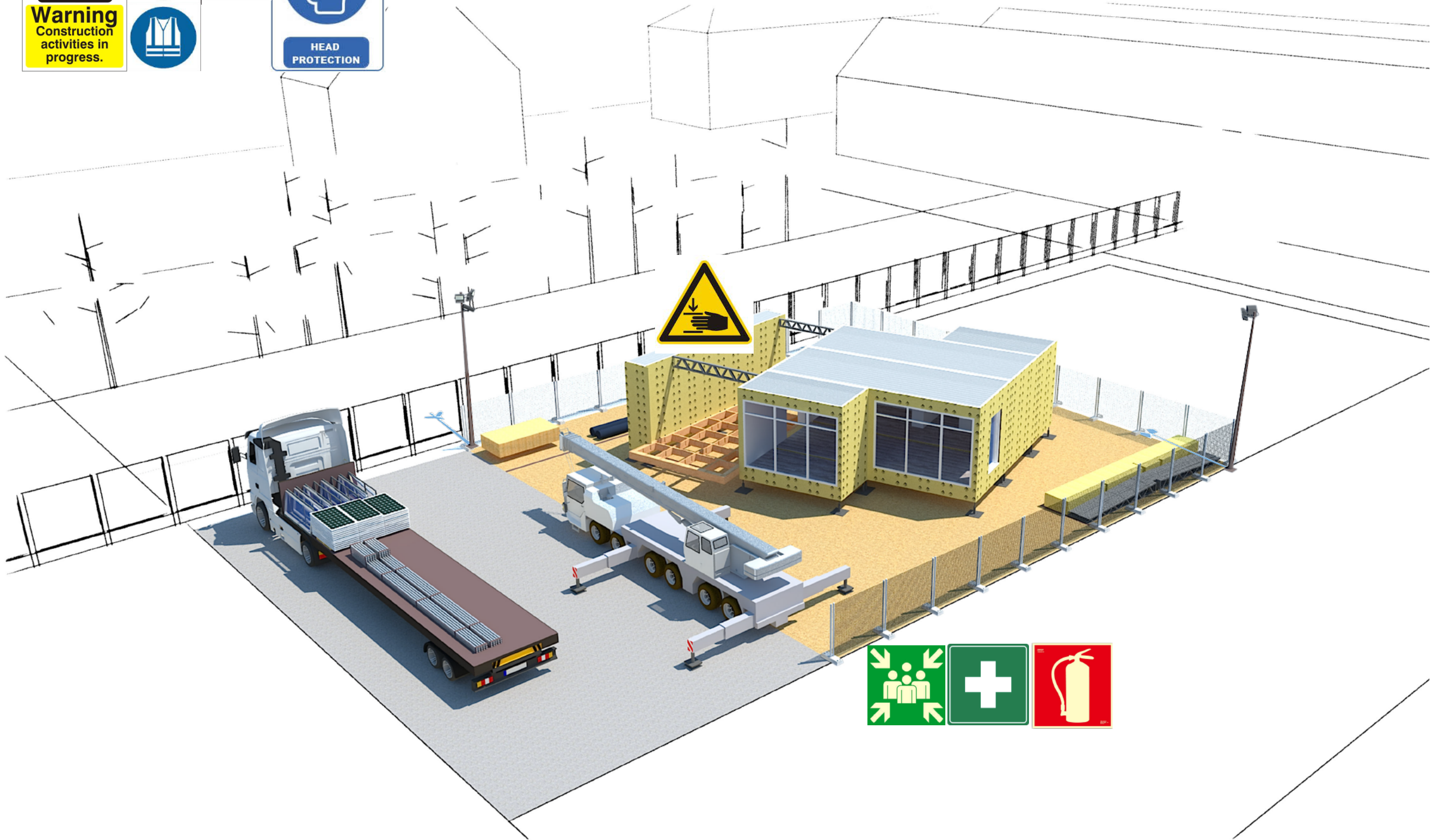


DATE : 26/03/14

SCALE :

HS-406

SITE SAFETY



DAY 2: Crane Operations

Greenhouse Floor



MORNING

AFTERNOON

NIGHT

HS-407

éqipe
VIA - UJI

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DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 7 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER

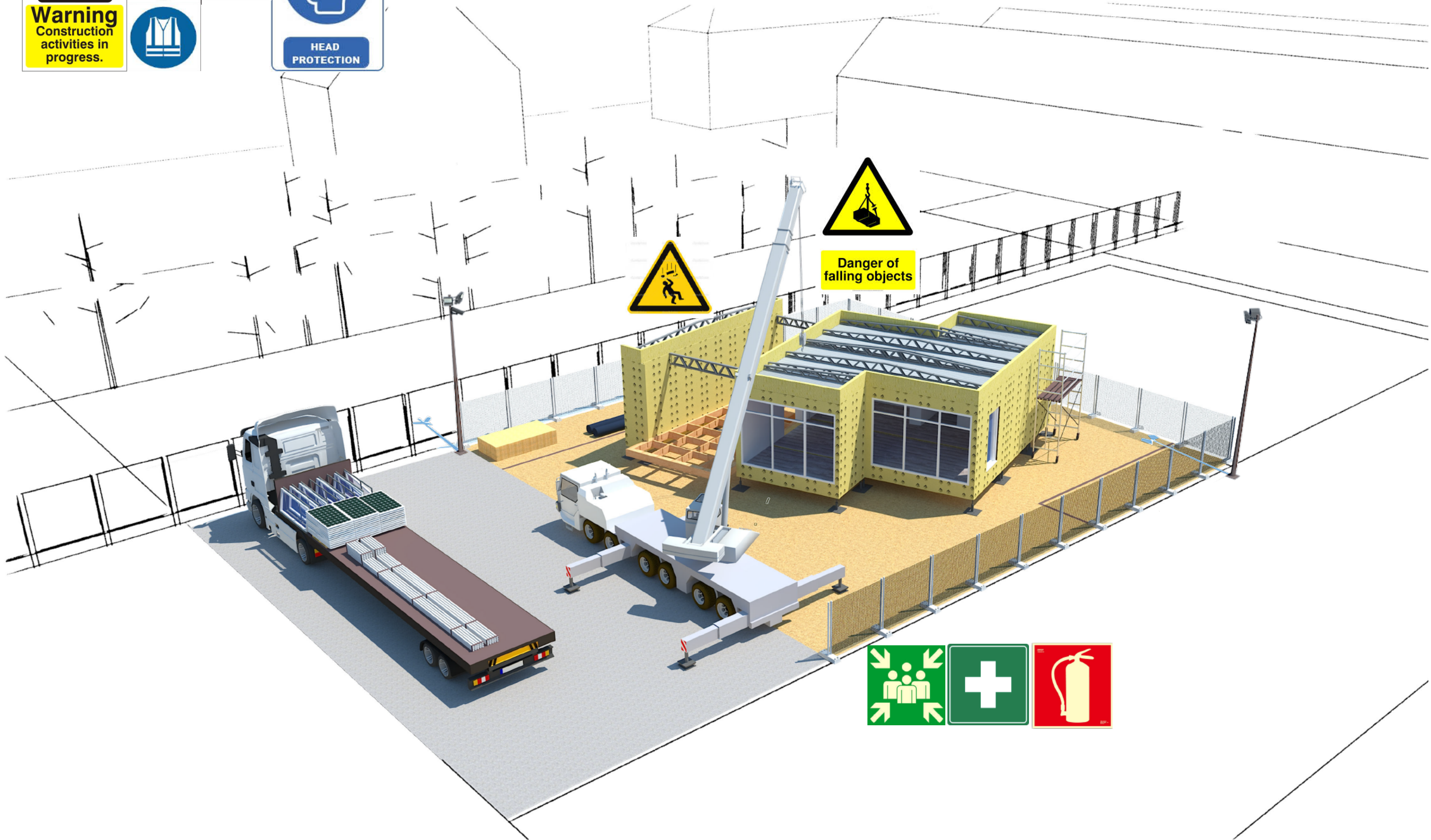


DATE : 26/03/14

SCALE :

HS-407

SITE SAFETY



Danger of falling objects



DAY 2: Crane Operations

Greenhouse Floor

Crane Operations

MORNING

AFTERNOON

NIGHT

HS-408

éqipe
VIA - UJI

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DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 8 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER

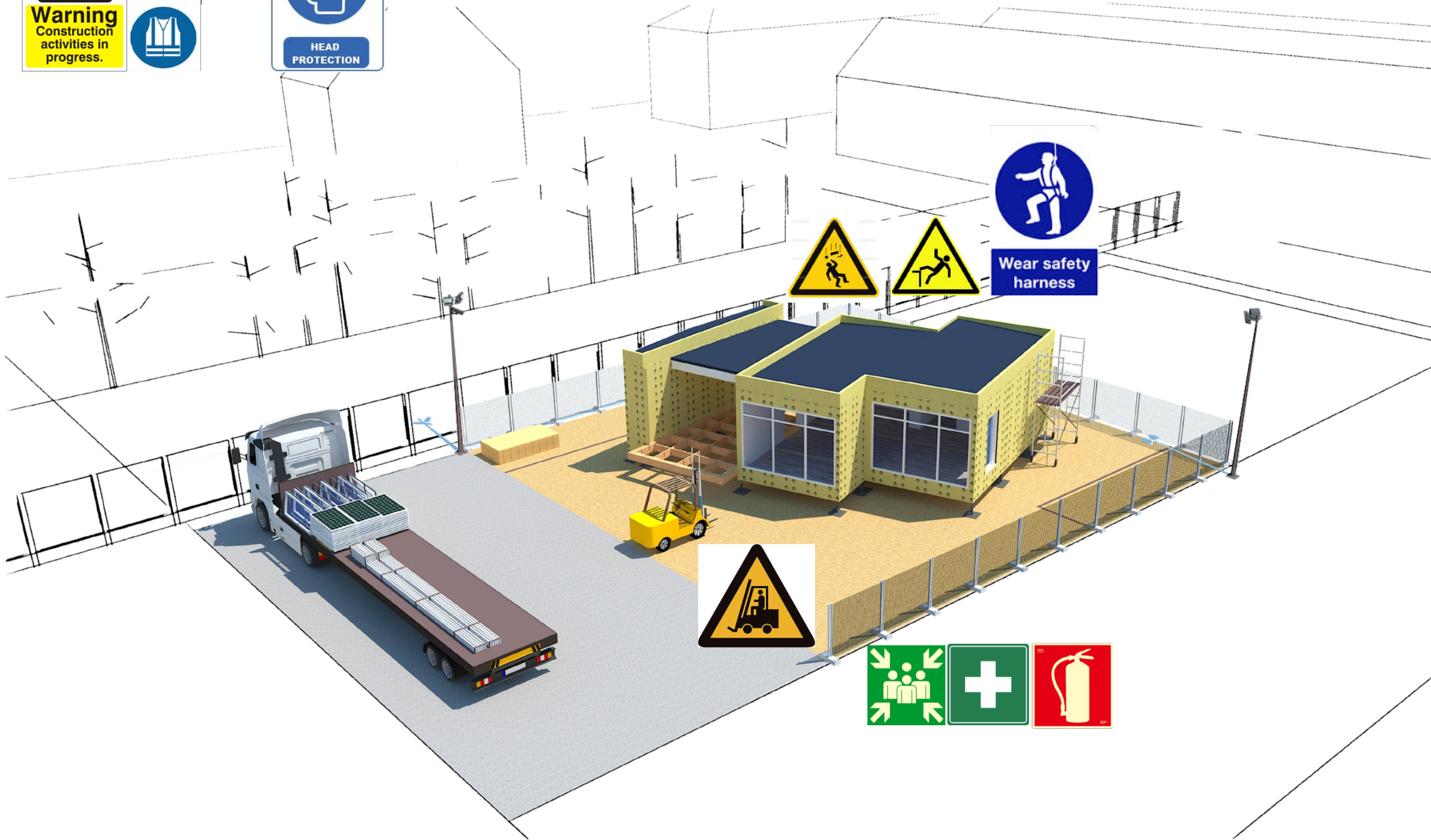


DATE : 26/03/14

SCALE :

HS-408

SITE SAFETY



DAY 2: Crane Operations

Greenhouse Floor

Crane Operations

Roof

MORNING

AFTERNOON

NIGHT

HS - 409

éqipe
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly - 9 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

SCALE :

HS - 409

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



HS - 410

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly -10 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM
VIVANIA
SOLUCIONES CONSTRUCTIVAS

GOLD
butech.
PORCELANOSA Grupo

SILVER
Schneider Electric

Placo
SAINT-GOBAIN

ISOVER
SAINT-GOBAIN

rational
WINDOWS & DOORS

NILAN
OUTSTANDING INDOOR CLIMATE

DATE : 26/03/14

SCALE :

HS -410

DAY 2: Crane Operations

Greenhouse Floor

Crane Operations

Roof

Windows and Photovoltaic Installation



MORNING

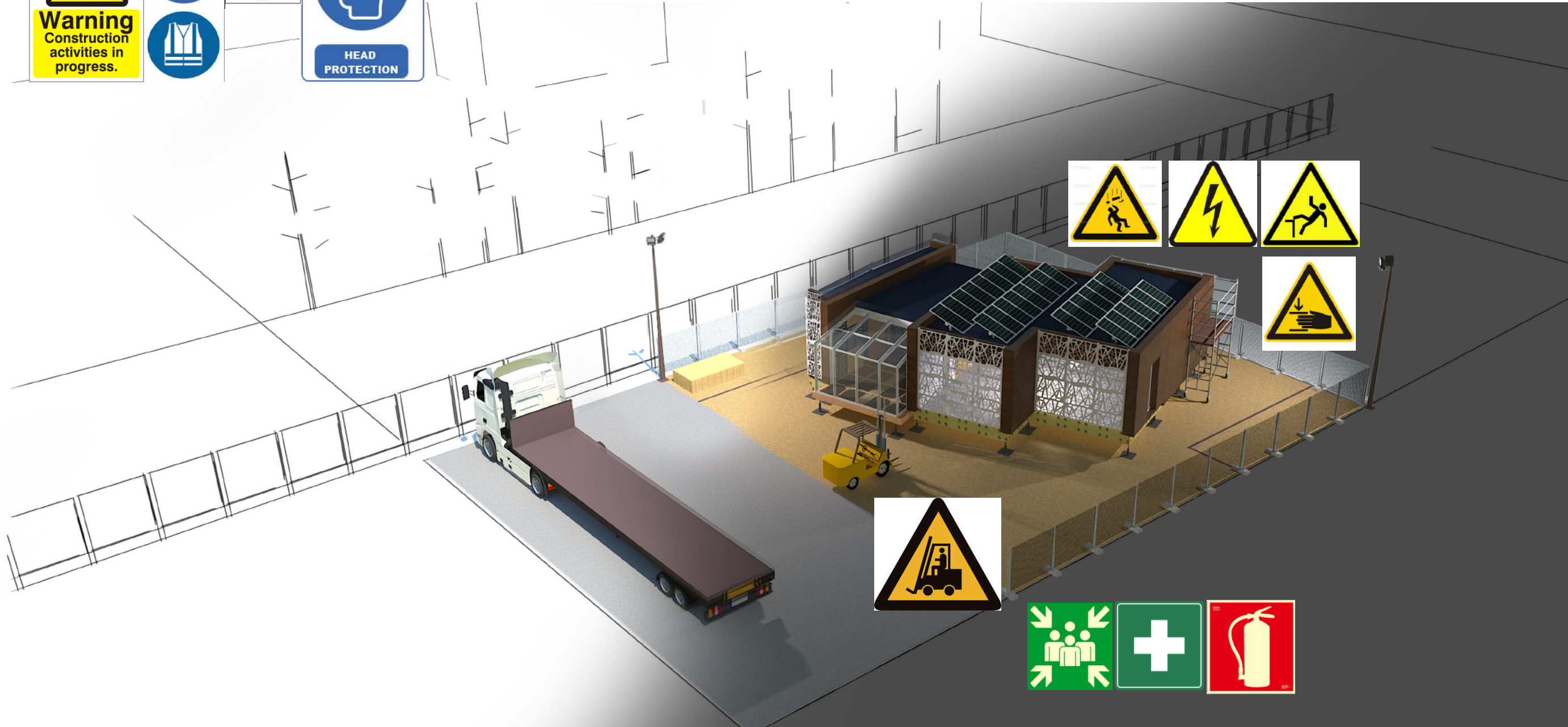
AFTERNOON

NIGHT

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



DAY 3: Exterior Cladding (ventilated facade - east) and Photovoltaic Installation (Conexion, check and test)

DAY 4: Exterior Cladding (mobile sunscreen - south) and Installations (Plumbing and ventilation)

DAY 5: Exterior Cladding (Ceramic tiles - west) and Interior Works

Exterior Cladding (north)

MORNING

AFTERNOON

NIGHT

HS-411

équpé

VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly -11 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

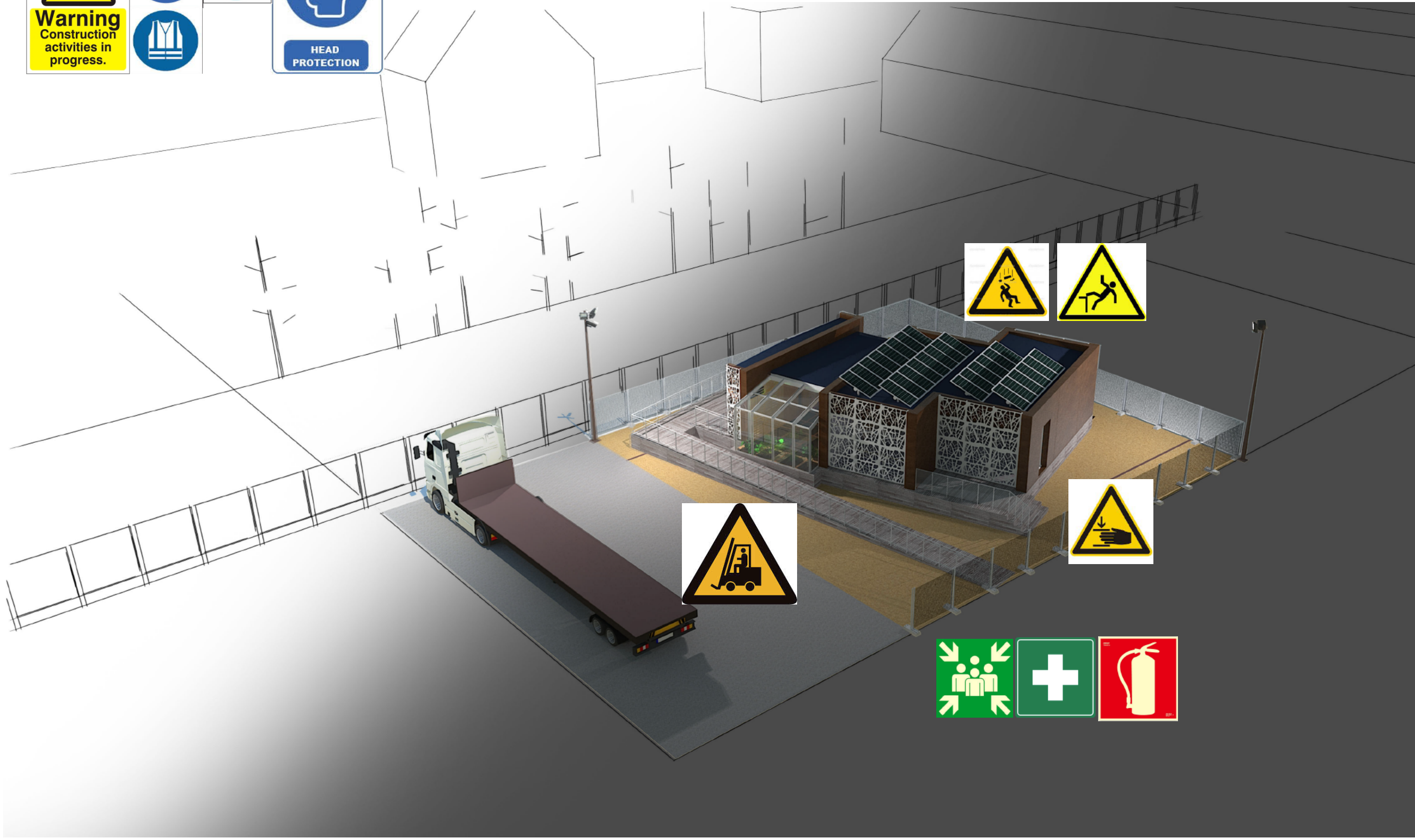
SCALE :

HS- 411

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



HS-412

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly -12 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

SCALE :

HS- 412

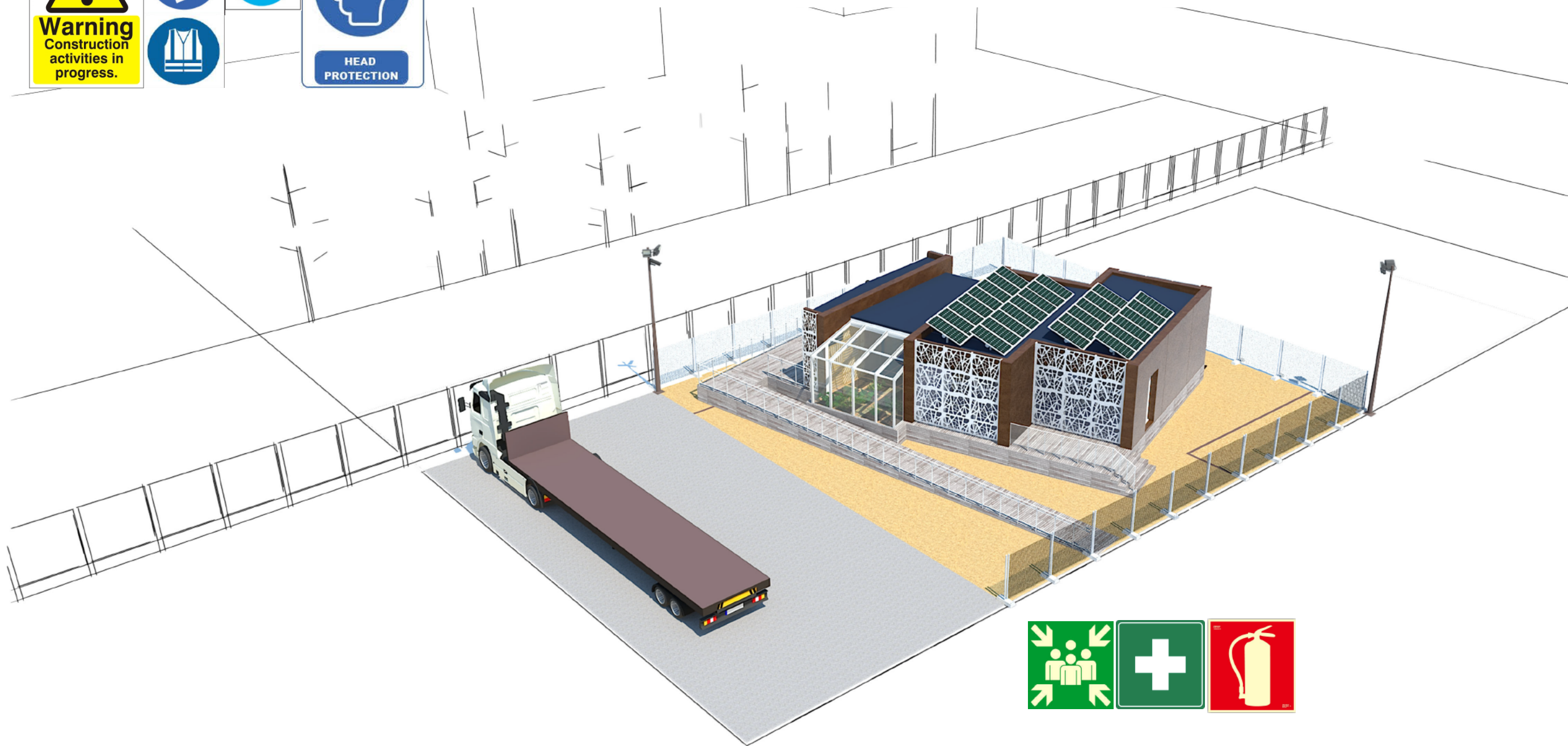
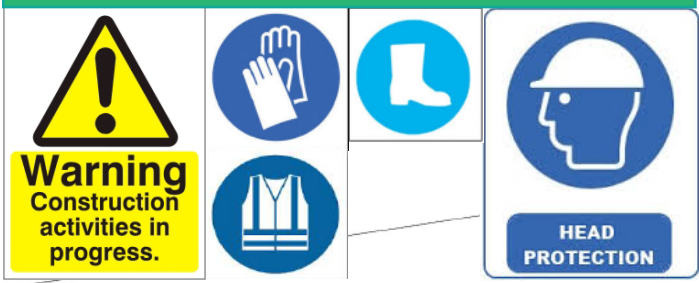
DAY 6: Exterior Cladding (north) and Exterior Platform

MORNING

AFTERNOON

NIGHT

SITE SAFETY



DAY 7: Furnitures and Interior Design



DAY 8, 9, 10: Verifications/ Finishes/ Ceck/ Test/ Cleaning/ Delay



MORNING

AFTERNOON

NIGHT

HS-413



www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during assembly -13 of 13

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER

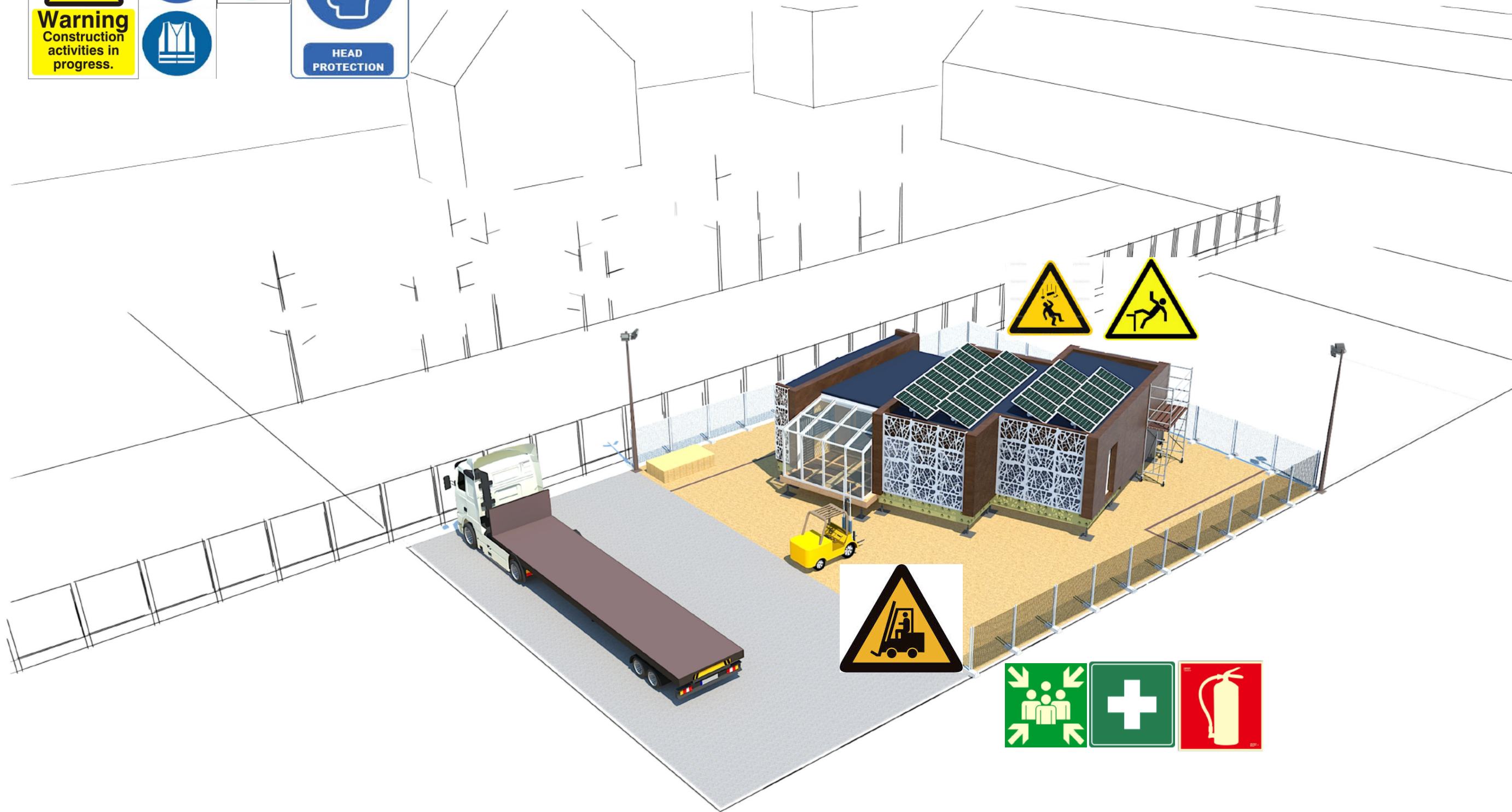
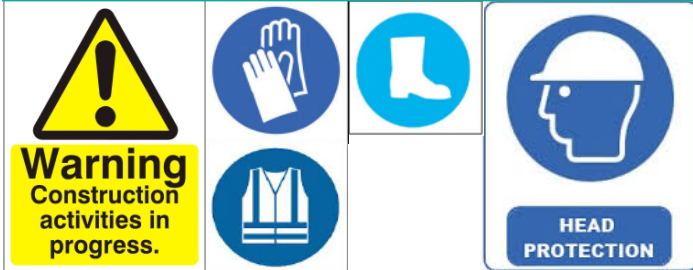


DATE : 26/03/14

SCALE :

HS- 413

SITE SAFETY



HS-414

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VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
1 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

SCALE :

HS- 414

DAY 1: Disassembly Exterior Platform, Furnitures and Exterior Cladding

MORNING

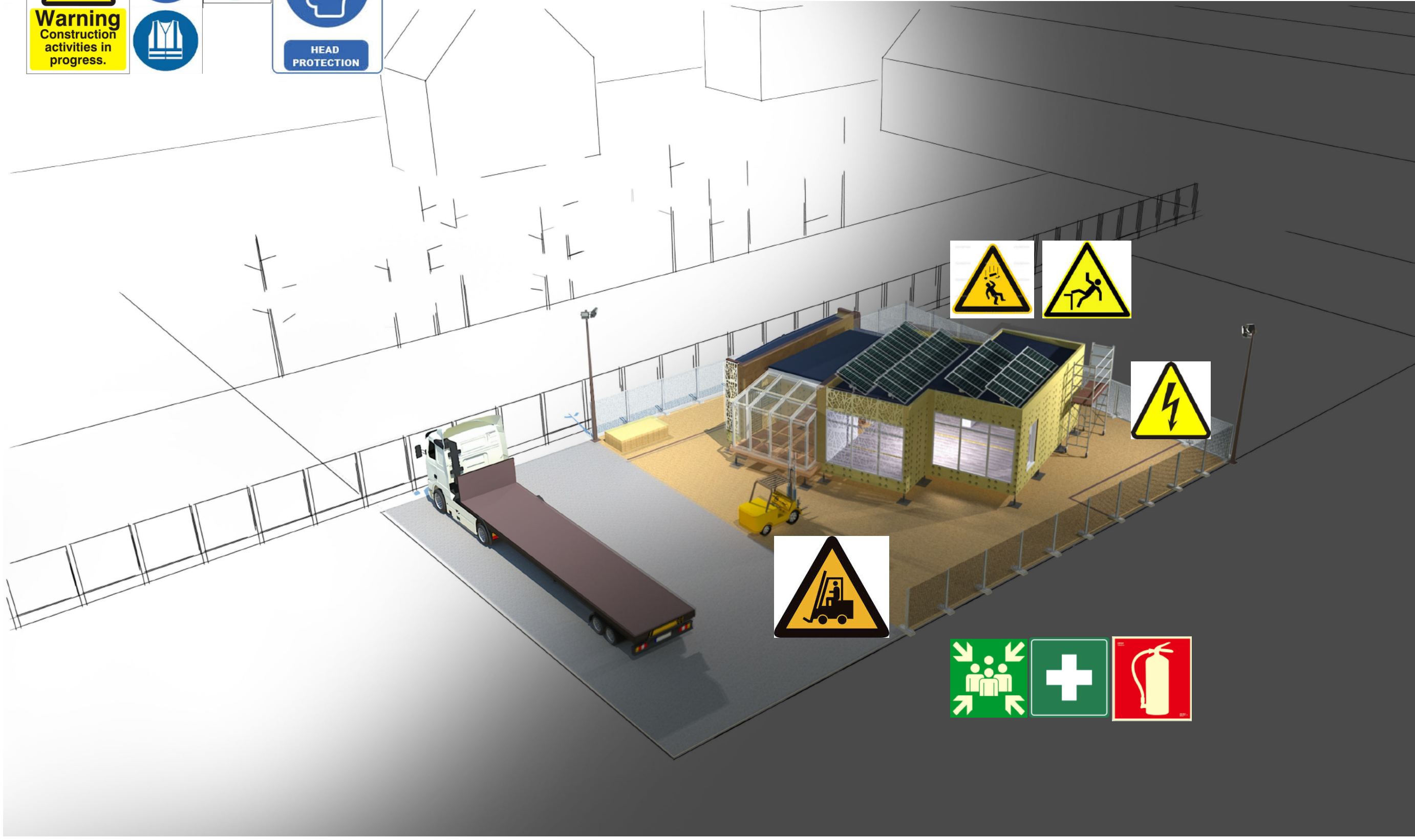
AFTERNOON

NIGHT

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



HS-415

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
2 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

SCALE :

HS- 415

DAY 2: Disassembly Exterior Cladding and Disconnecting electrical and plumbing systems

MORNING

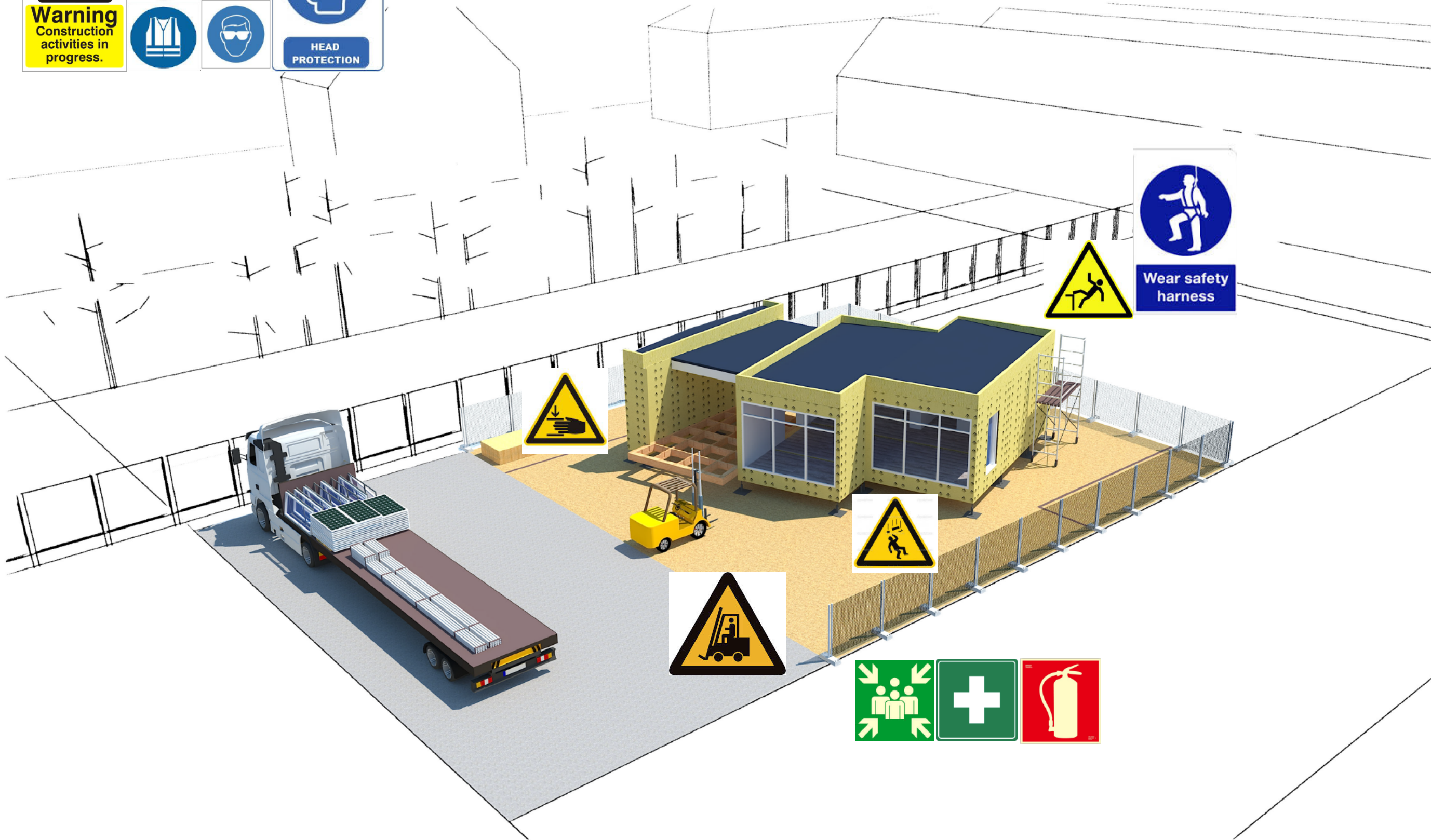
AFTERNOON

NIGHT

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



DAY 3: Disassembly PV system, top roof and windows

MORNING

AFTERNOON

NIGHT

HS-416

éqipe
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
3 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

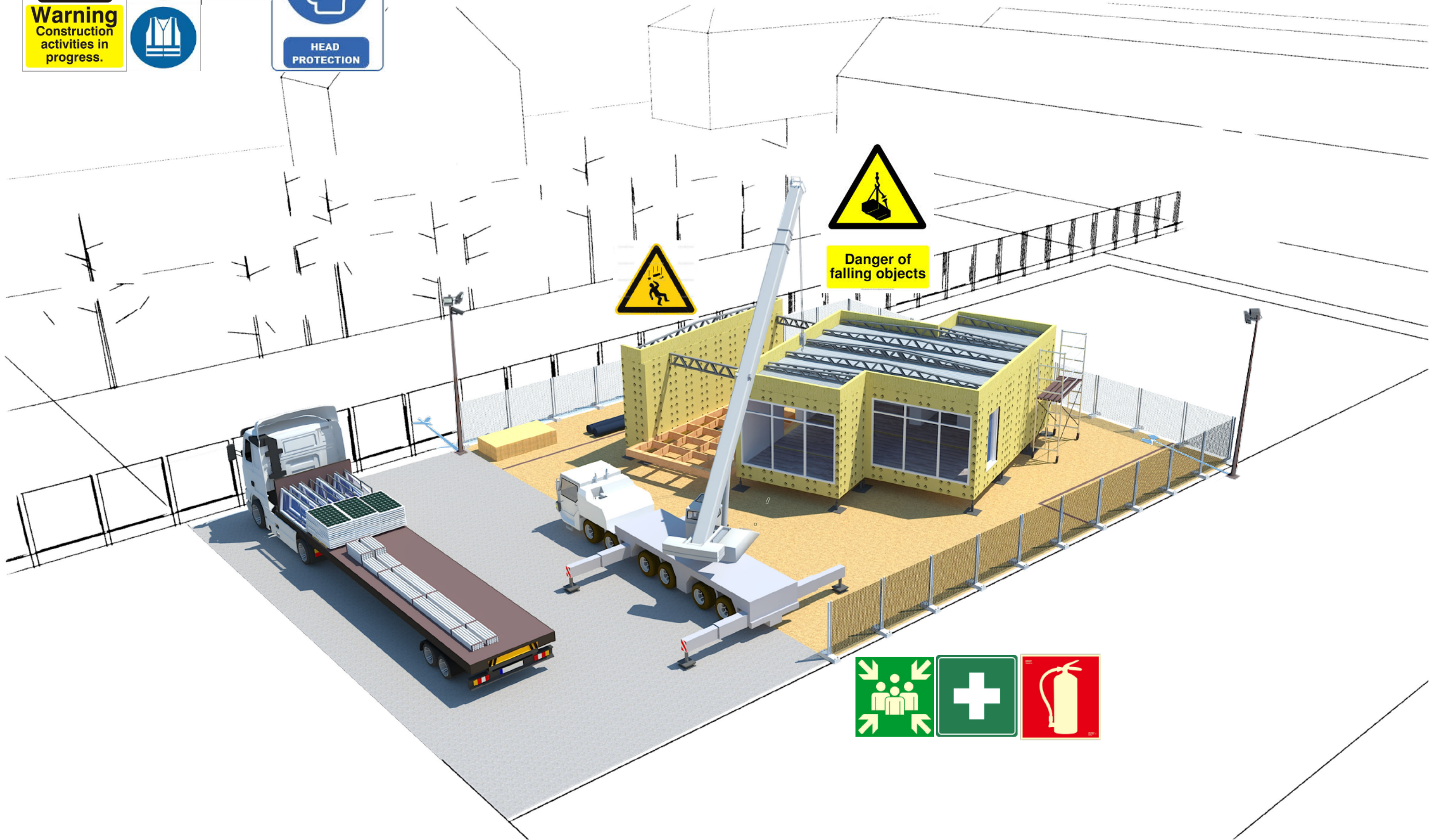
SCALE :

HS- 416

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



Danger of falling objects

DAY 4: Crane operations



MORNING

AFTERNOON

NIGHT

HS-417

éqipe
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
4 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM
VIVANIA
SOLUCIONES CONSTRUCTIVAS

GOLD
butech.
PORCELANOSA Grupo

SILVER
Schneider
Electric



DATE : 26/03/14

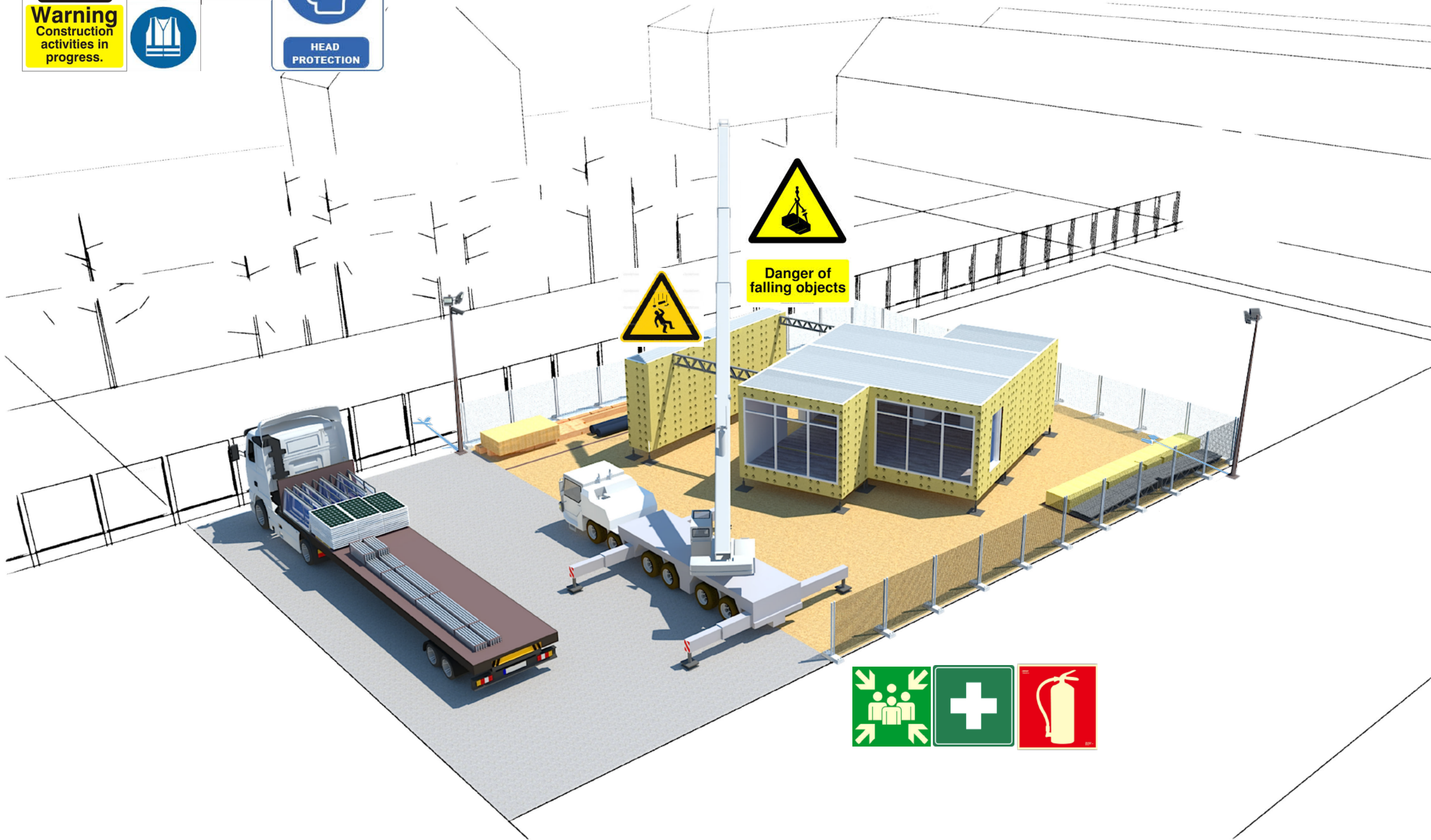
SCALE :

HS - 417

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



DAY 4: Crane operations

Greenhouse floor



MORNING

AFTERNOON

NIGHT

HS-418

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
5 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER

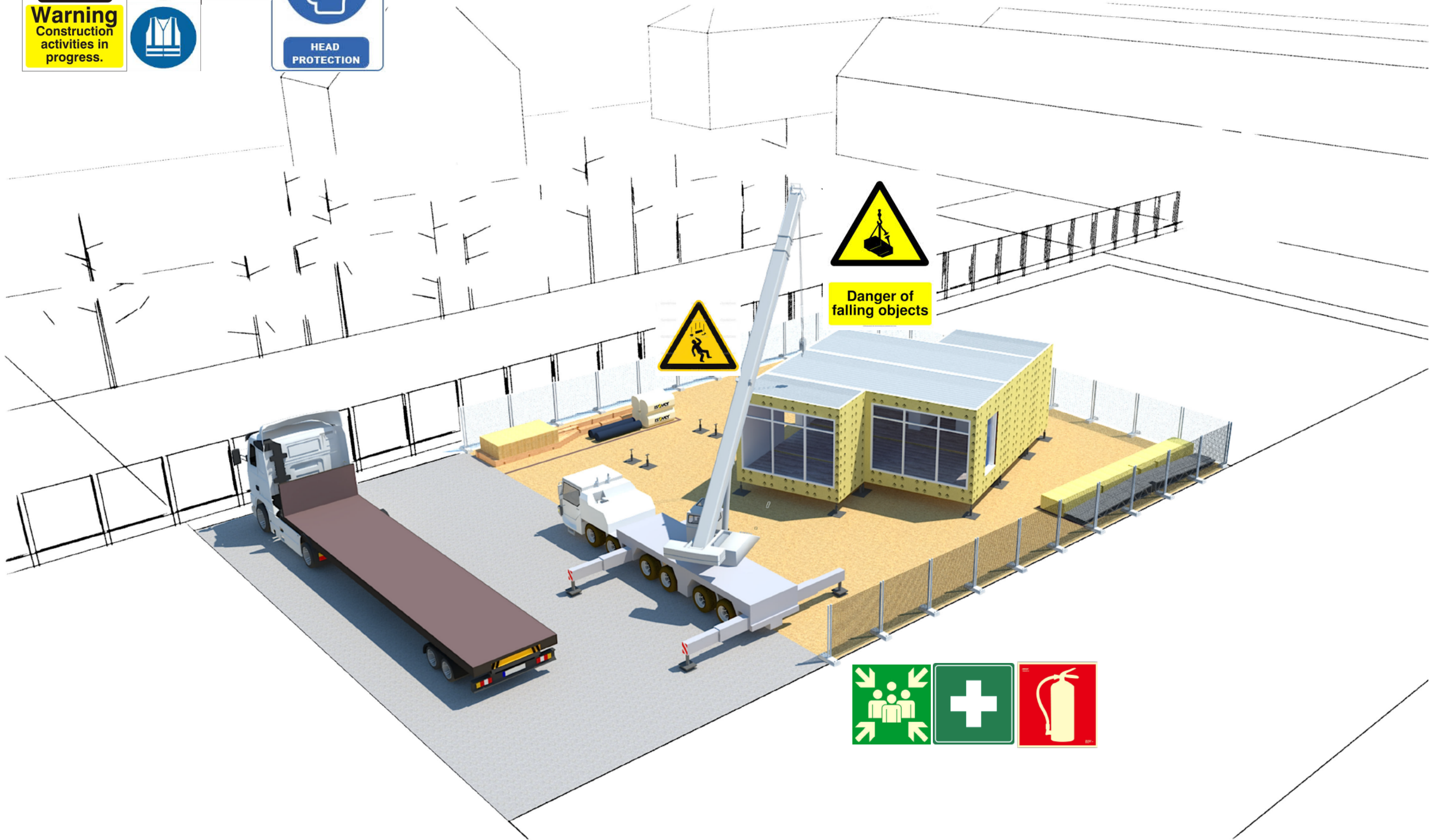
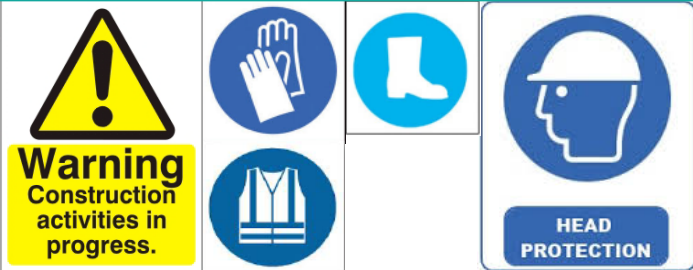


DATE : 26/03/14

SCALE :

HS- 418

SITE SAFETY



Danger of falling objects



DAY 4: Crane operations Disassembly Greenhouse floor Crane Operations



MORNING

AFTERNOON

NIGHT

HS-419

éqipe
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
6 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

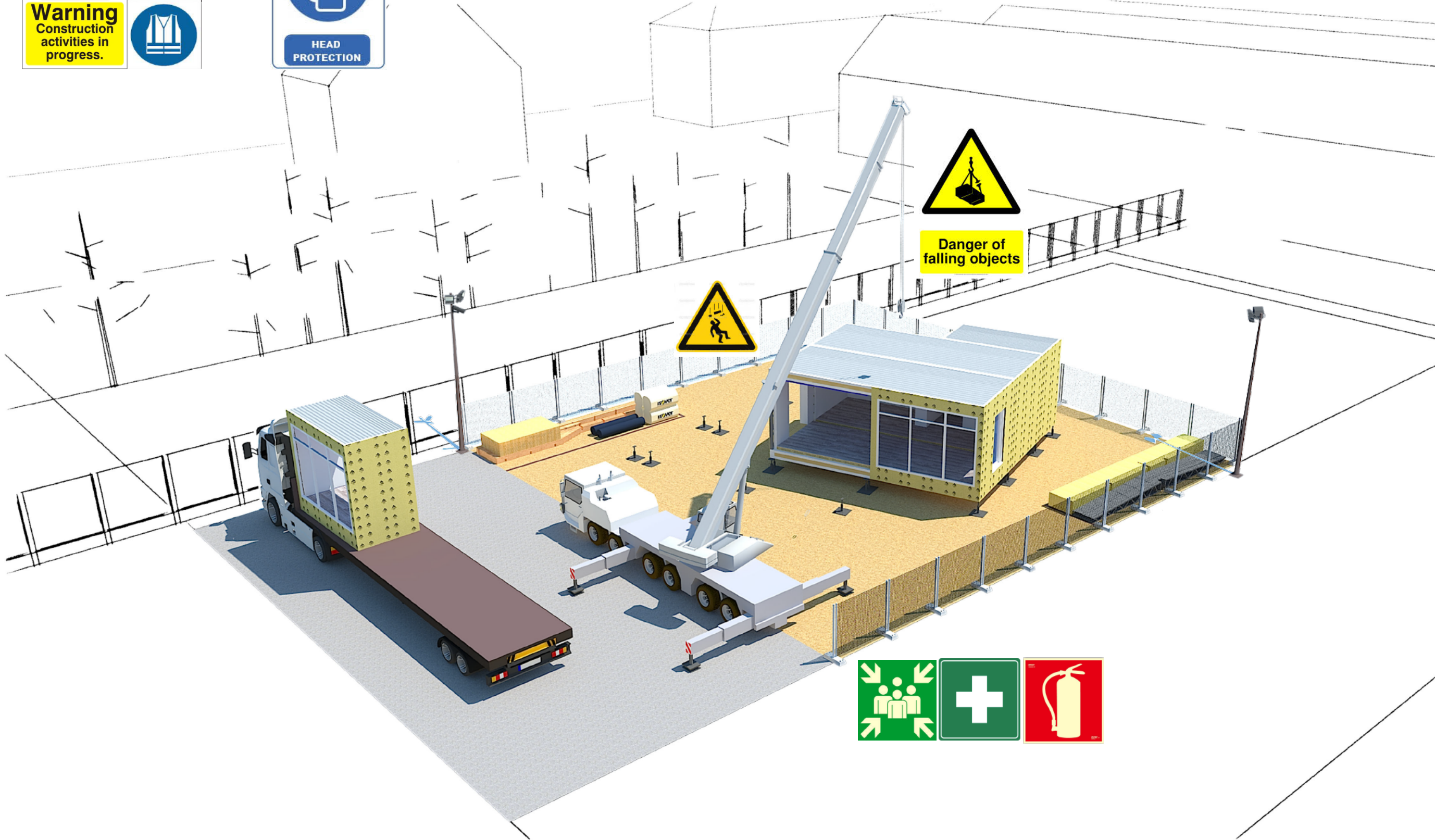
SCALE :

HS- 419

SITE SAFETY

Warning
Construction activities in progress.

HEAD PROTECTION



DAY 4: Crane operations Disassembly Greenhouse floor Crane Operations



MORNING

AFTERNOON

NIGHT

HS-420

équipe
VIA - UJI

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DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
7 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

SCALE :

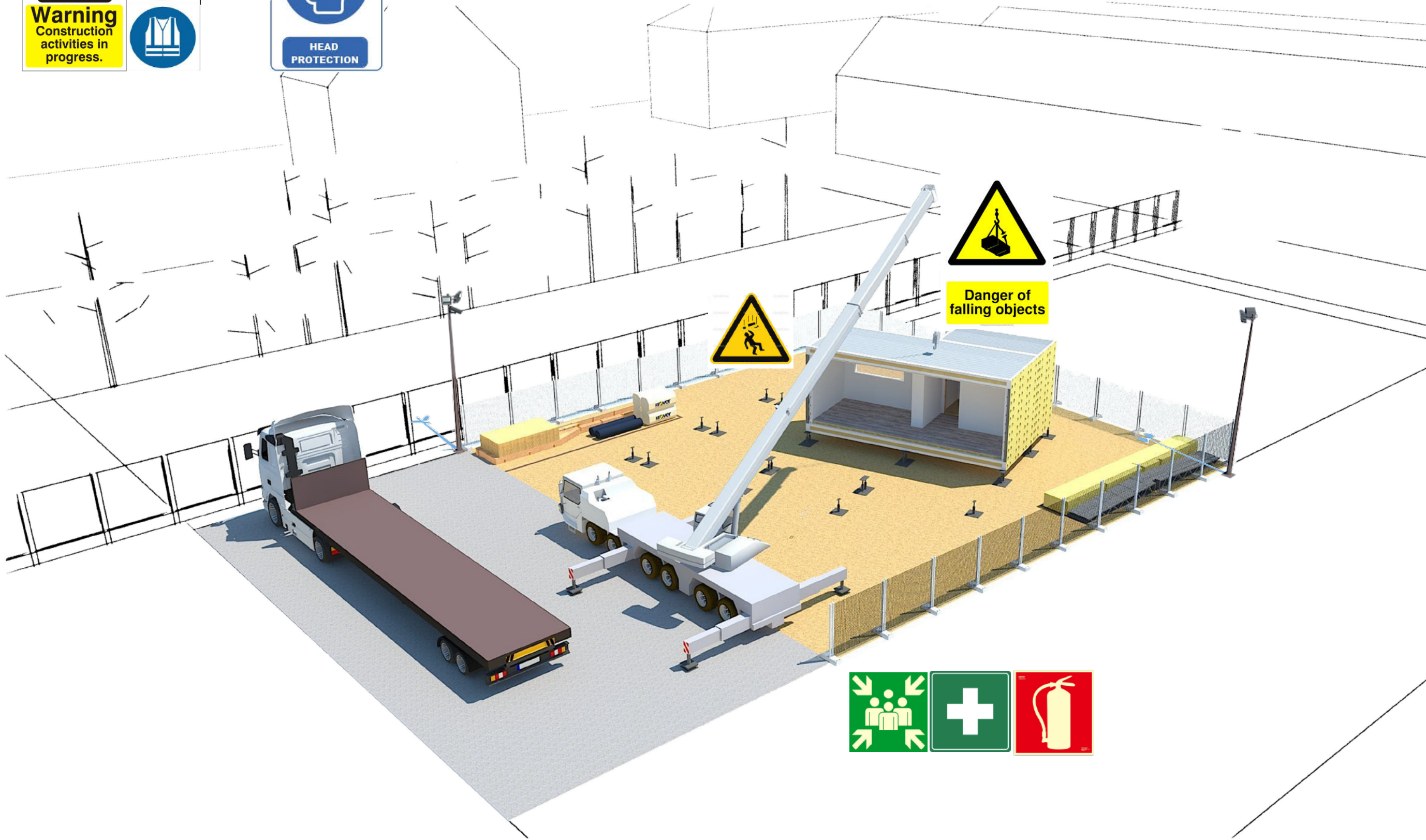
HS- 420

SITE SAFETY



Warning
Construction activities in progress.

HEAD PROTECTION



DAY 4: Crane operations Disassembly Greenhouse floor Crane Operations



HS-421

équpé
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY during disassembly - 8 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
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PORCELANOSA Grupo

SILVER
Schneider Electric

Placo
SAINT-GOBAIN

ISOVER
SAINT-GOBAIN

rational
WINDOWS & DOORS

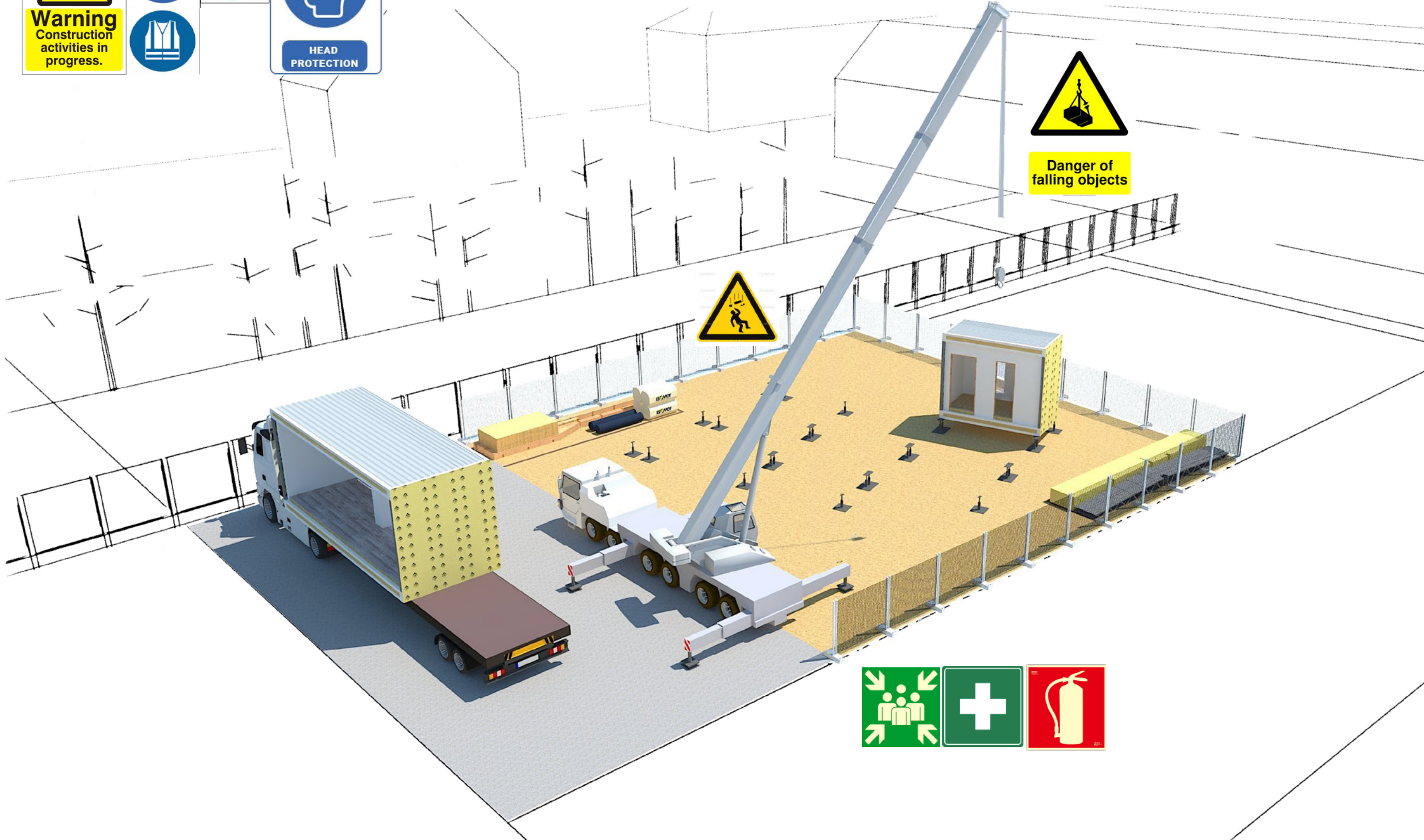
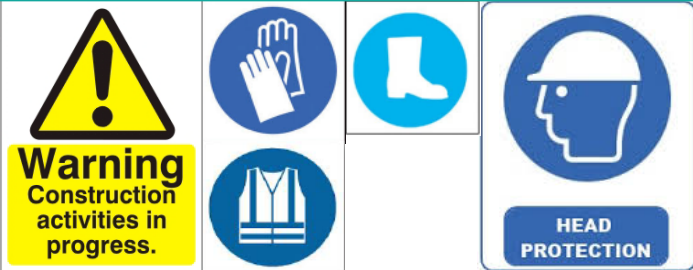
NILAN
OUTSTANDING INDOOR CLIMATE

DATE : 26/03/14

SCALE :

HS - 421

SITE SAFETY



DAY 4: Crane operations Disassembly Greenhouse floor Crane Operations



HS-422

éqipe
VIA - UJI

www.equipe.via.uji.es



DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
9 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER

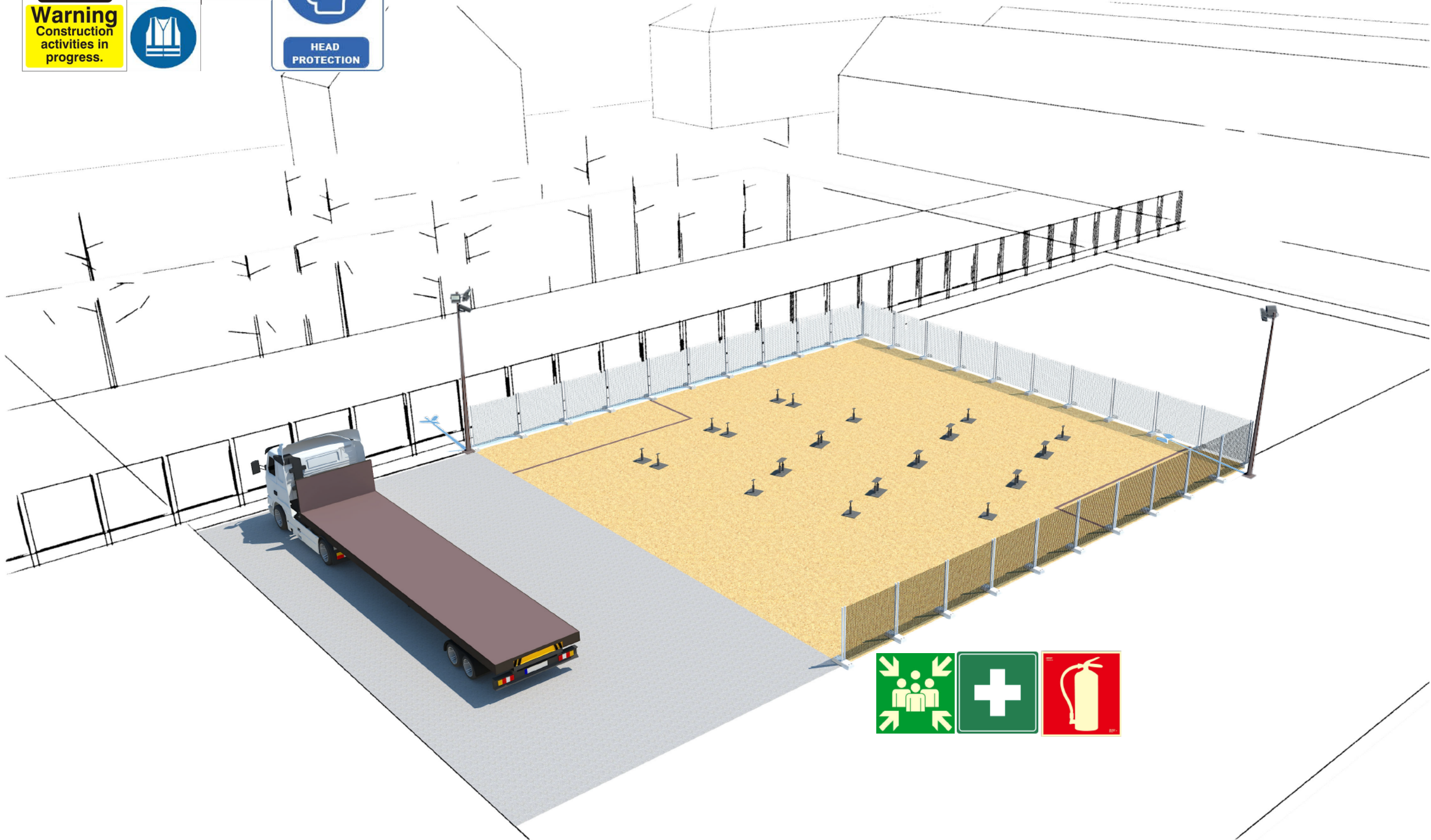
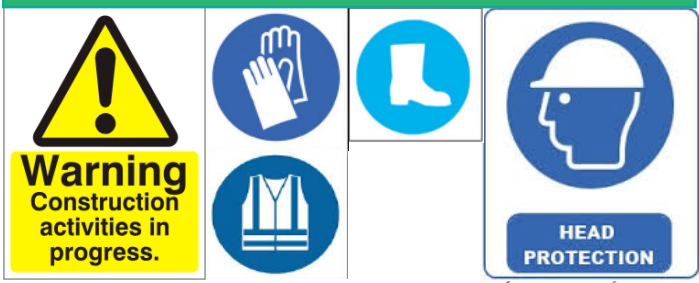


DATE : 26/03/14

SCALE :

HS- 42

SITE SAFETY



DAY 5: Removal foundation and Site Cleaning



HS-423



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DELIVERABLE : #4

SUBJECT :
HEALTH & SAFETY
during disassembly -
10 of 10

AUTHOR :
Rosa Prades

SPONSORSHIP :
PLATINUM



GOLD



SILVER



DATE : 26/03/14

SCALE :

HS- 423

- Arrêté du 21 août 2008 (<http://reef.cstb.fr/document/fiche/ABOB.html?code4x=ABOB>) sur la récupération des eaux de pluie et leur usage à l'intérieur et à l'extérieur des bâtiments (August 21, 2008 on rain water collect and their use inside and outside buildings)

- Lettre circulaire DGS/SD7A n°298 du 20 mars 2006 dans laquelle le Ministère de la Santé met en garde contre l'utilisation des eaux pluviales pour un usage domestique (Letter of DGS/SD7A n°298 of March 20, 2006 in which Health Ministry warns against rainwater utilisation for domestic use)

- Règlement sanitaire départemental, notamment l'article 15 interdisant aux usagers la livraison d'une eau autre que celle de la distribution publique d'eau potable (Department Sanitation Rules, specifically article 15 about interdiction of supplying other water than potable water public distribution)

2. Greywater. Water coming from bathtubs, showers, bath sinks and clothes washers is considered greywater.

- a). As stated in Rule 8.5, greywater may be used for irrigation and cleaning. Greywater may be reused to water vegetation or for cleaning purposes if it is first processed by an approved greywater reuse system which avoids undesired organisms (see Rule 9.2).
- b). Teams are not permitted to transport manually greywater from the tanks to the vegetation's location or location to be cleaned.
- c). The approval of the greywater system by the SDE organizers will only be effective at the Solar Village in Versailles during the public event. The greywater systems will be approved evaluating each particular case and considering the following criteria:
 - i. No black water source can be connected to a greywater storage or distribution system.
 - ii. Water coming from kitchen sinks and dishwashers is considered black water. As a reminder, the water closet will not be connected to the sewage disposal system during the event. This leaves bathtubs, showers, bath sinks and clothes washers as the only available sources for connection to a greywater storage/use system.
- d). As stated in Rule 8.5 only treated greywater can be reused. The greywater treatment system must be adequate for the water intended use.
- e). Teams that pretend to use any water treatment system must send the appropriate information to the SDE 2014 Organization, indicating the fixtures connected to the greywater system, the pipes system and tanks and any other discharge points. A note must be included, indicating the safety label for any greywater reuse system. Additionally, they must submit documentation that certifies that the selected water treatment is safety, and the treated water does not pose a risk for human health, in their proposed use.

R52

RULE 52 HEALTH AND SAFETY

The main objective regarding health and safety is to prevent incident or accident to occur during each phase of the competition, including the truck delivery. As stated in Rule 3.3, "each team is responsible for the safety of its operations and each team member and team crew member shall work in a safe manner at all times during the project."

Due safety is an area of major importance for the organizers of the Competition; great emphasis is going to be made to confirm that the teams are complying with:

- **Planning and executing a safe process of production:** all along the project development Teams must plan and develop every single phase of the competition considering Health and safety requirements as a must.
- **The European Union and/or French law for the Prevention of Labour Risks** (Health and Safety at Work). This is absolutely mandatory, since the event is located in Versailles.

The General Coordination Plan in French (legal version) and an English translation will be available on the WAT (Official Communications/, Exchange/, Rules and related documentation/, General Coordination Plan).

52.1. French Applicable Regulation

The prevention of risks must be integrated during the preparation, assembly, executing, maintenance and disassembly of the Solar Decathlon Europe 2014 event.

The teams must comply with the regulations based on the International Labor Organization (ILO) and the corresponding European directives, especially the French law for the Prevention of Labor Risks (Health and Safety at Work).

Considering Health and safety (HS) in the workplace, the actions to be done during this competition are regulated by the Labor Regulation from France, member of the European Union. Health and Safety French regulation focus on the analysis of risks for persons related to construction works, and the way to resolve them. Any other safety regulations (safety in use, structural safety, etc.) belong to other areas of this Competition and therefore are not included in this rule.

The workplaces and their management must comply with the applicable laws, regulations and orders, notably:
- Decree no. 94-1159 of December 26-1994 for all work in the workplace, in accordance with the law 93-1418 about HS coordinator activity.

Decathletes may be subject to the risk of accidents during the construction of the houses. These risks are mainly the same as those labor accidents regulated in the aforementioned French law. The same law is applicable for all the contracted staff. As a result, Rule 52 of the SDE Rules is based on the Health and Safety French Regulation, and it is mandatory for all the Team members.

We draw your attention to the fact that each team must get organized in order to take into account the provisions resulting from the General Coordination Plan that is about Health and Safety Protection (“PGC / Plan général de coordination” in French), and notably the two following elements:

- For the operation’s design and implementation phases, a safety coordinator has been appointed in order to organize the Health and Safety coordination between the various participants in the workplace.
- The present document, entitled General Coordination Plan relating to Safety and Health Protection is an open-ended document that is reviewed and updated by the coordinator based on the progress of the work. Each team must therefore take into account, in its organization of the work, the information elements detailed in the General Coordination Plan relating to Safety and Health Protection, bearing in mind that this document may be subject to changes or additions that will be brought to your attention during the work. The General Coordination Plan will be available on the WAT (Official Communications/Exchange/Rules and related documentation/General Coordination Plan). The French version (legal version) and a translated one will be provided.

REMINDER OF THE GENERAL PREVENTION PRINCIPLES (Articles L4121-1 and L4121-2)

1. Avoid risks.
2. Evaluate unavoidable risks.
3. Combat risks at source.
4. Adapt work to manpower.
5. Take into account the technical evolution.
6. Replace dangerous items with safe ones or less dangerous ones.
7. Plan safety measures before the work begins.
8. Use collective protection prior to individual ones.
9. Give the appropriate instructions to the workers.

52.2. Work Phases

To comply with the two aforementioned objectives (complying with French regulation and developing a safe process) there are four different steps to be made:

- 1. Process of analysis**
- 2. Health and Safety Plan (HS Plan)**
- 3. Preparing for construction works**
- 4. Construction works**

52.2.1. Step 1: Process of analysis

Safety measures must be defined as the consequence of the analysis of the assembly, maintenance and dismantling of the house. The suggested process is as follows:

A. Breakdown the PROJECT in work-units or activities. For example foundation execution, façade assembly, installation of PV panels, etc.

B. Identify the TASKS to be developed in each work-unit, among others: transport, unloading, stock up, on-site layout, assemble, etc.



For example, the structural tasks for a modular house will consist on:

1. Transporting the module
2. Unloading the module
3. Stocking the module
4. Making the on-site layout
5. Laying the module on site
6. Assembling the module with the rest of the structure.

C. Identify the AGENTS (human resources, machinery, materials, etc.) that take part in each task:

Following the previous example:

1. The truck
2. The load
3. The Health & Safety Operations' coordinator responsible for managing the work
4. The workers
- 5....

D. Identify the RISKS associated to each task, advising of the MEASURES to take for solving them:

Following the previous example:

Task 1: Unloading module

Risk 1a: getting knocked down by the transport truck in the working area.

Solution 1a: Certified truck driver, marking circulation ways separated from the workers path, etc.

Risk 1b: ...

Solution 1b: ...

Task 2: laying the module on site

Risk 2a: getting knocked down by the load.

Solution 2a: controlling the load with ropes from at least four opposite points, keeping workers far away from the module; Crane controller with specific license, etc.

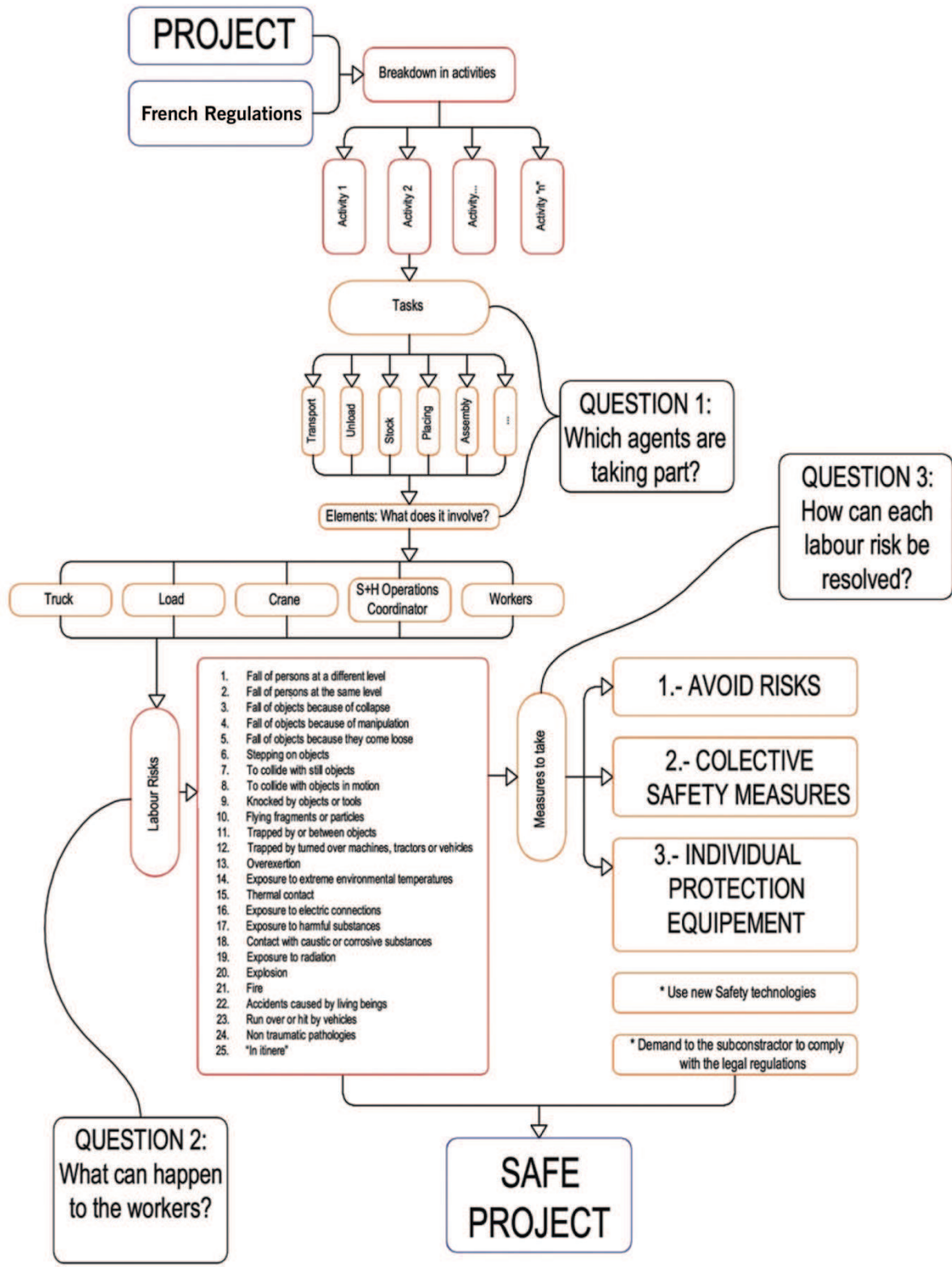
Risk 2b: ...

Solution 2b: ...

Figure 23 shows the Process of Analysis explained above, which aim is to answer three questions:

- 1. Which agents (elements) are taking part? Identify the decathletes, workers, machinery, auxiliary resources, etc.
- 2. What can/would happen to the team members? For each task, carefully examine what could cause harm to the people. Therefore, identifying the hazards, who might be harmed and how.
- 3. How can each risk be solved? Describe the measures to be adopted to solve each risk.

Figure 23. Process of analysis of the Health and Safety Plan



The following list is based on the list of labor risks established in the French Regulation. For the risk Analysis, select those which may take place in every work unit.

25 risks

1. Fall of persons at a different level
2. Fall of persons at the same level
3. Fall of objects because of collapse
4. Fall of objects because they come loose
5. Fall of objects because of manipulation
6. Stepping on objects
7. Colliding with still objects
8. Colliding with objects in motion
9. Knocked by objects or tools
10. Flying fragments or particles
11. Accidents caused by living beings
12. Trapped by or between objects
13. Trapped by turned over machines, tractors or vehicles
14. Overexertion
15. Exposure to extreme environmental temperatures
16. Thermal contact
17. Exposure to electric connections
18. Exposure to radiation
19. Exposure to harmful substances
20. Contact with caustic or corrosive substances
21. Explosion
22. Fire
23. Run over or hit by vehicles
24. Non traumatic pathologies
25. "In itinere"

It is important to remember that the Risk Analysis must cover not only the construction process, but all the activities of the SDE Competition: project development, previous works at university, decathletes training, transport, assembly, maintenance during competition, disassembly, etc.

52.2.2. Step 2: Health and Safety Plan

The main objective of the Health and Safety Plan (HS Plan) is preventing and solving any incident that may arise during the construction works, and must include assembly and disassembly in La Cité du Soleil®, maintenance during contest week, and vehicles accesses and exits to the Village.

All the HS documents will be a useful guide for the Team about the know-how to carry out the activities.

Each team will write a document called Health and Safety Plan ("Plan Particulier de Sécurité et Protection de la Santé" or PPSPS in French) specific to the workplace and be in charge of its practical application on site.

This document will be in response to an in-depth risk analysis of all situations related notably to:

- Performance of tasks
- Joint or successive activities,
- Environment and surroundings of the workstations and jobsite,
- Direct or indirect risks for persons, property and the environment that the performance of the operation could directly or indirectly entail, etc.

This document will be analyzed by the HS Coordinator. Each team must update its HS Plan according to all observations done through the "H&S plan analysis" report.

REMINDER OF THE LEGAL CONTENT OF THE HS Plan

Name and address of SDE 2014, HS Coordinator, Prevention authorities, Team

Number of workers

Contact information of the site operation coordinator

Description of works

First aid procedure

Name and number of first aid certificated worker

Description of the Team's first aid kit.

Description of hygiene conditions (toilet, changing room, restroom...)

Detailed description of operating modes

Risk assessment – risks generated by other, risks generated by environment, risks generated on other and self-generated risks

Procedures to adapt collective protection

The HS Plan must explain and describe the aforementioned process of analysis. HS Plan will be required from Deliverable #3 onwards. Information will be updated and specified along with the project development, including further details in each deliverable. The plan consists of:

1. Health and Safety Drawings (**HS Drawings**), to be included in the corresponding section of the Project Drawings.
2. Health and Safety Report (**HS Report**), to be included in the Project Manual, in the Health and Safety Plan Section. Proper reference to drawings location should be made every time needed.
3. Health and Safety Specific Terms and Conditions Document (HS Particular Conditions Document), to be included as well in the Project Manual, in the Health and Safety Plan Section.

The HS Plan must be developed according to the following explanation, updated as many times as necessary, approved (please refer to Rule 52.4) and posted on the Team's lot wherever it is accessible to all persons working there and to the SDE Organizers.

A. HS drawings

HS Drawings, required in Rule 30.2, must clearly define the safety measures to adopt in every work phase. As minimum, must consist of:

- Identify the work Phases, determining the activities to be developed in each one, the risks associated and the safety measures adopted to solve them.
- Specify the Number of Team members and their corresponding task
- Collective protections to be used (position in each phase, details for its installation, etc.)
- First aid area inside the lot (first aid bag)
- Delimit the different areas inside the lot
- Determine the location of the most important elements for each work phase: movement of trucks, movement of modules (any heavy load in movement), position of crane, position of scaffolding, etc.
- Individual Protections to be used
- Signposting
- Emergency evacuation plan during the assembly and disassembly periods (corresponding to item 17 of the HS Report).

The evacuation plan must show the procedure in case of emergency or accident, and must include at least:

Drawings indicating the evacuation path

Route to the closest health center

Procedure to follow in case of accident

Emergency phones, assurance ID, etc.

As mandatory, the Evacuation Plan must be kept visible inside the lot (using, for example, a waterproof mobile signpost) during the final phase of the Competition. Moreover, each Team member must have a copy of it and keep it with him during their working periods.

Note: The SDE 2014 Organization suggests teams to develop the HS Drawings as assembly sketches of each unit, step by step, including all the aforementioned information for a better understanding of the adopted measures and its effectiveness.

B. HS Report.

The HS Report is the document that complies with Decree 94-1459, application of law 93-1418 about SPS coordinator activity. For the SDE Competition, a report with the following sections will be enough:

Template

1. Health and Safety Checklist
2. General data of the project
3. Health and Safety plan Objectives
4. Conditions of the site where construction will take place, and interesting data related to the prevention of risks during the construction process



- a). Constructive process
 - b). Type and characteristics of the materials and elements
 - c). Site description
 - d). Climate description
 - e). Accesses and paths for vehicles
 - f). Determining factors for the house placing
 - g). Overlaps with the affected services and other circumstances or activities of the environment, able to cause risks during the construction
 - h). Planned activities
 - i). Trades whose intervention is affected by the risks prevention
 - j). Auxiliary resources planned for the construction
 - k). Machinery planned for the construction
 - l). Construction site installations
 - m). Characteristics table for the stocks
5. Activities for risks prevention
- a). Construction plan: determination of work effective timing.
 - b). Overlaps and incompatibilities in the construction
 - c). Number of Team members taking part in the construction
 - d). Contracting planned
6. Critical work phases for risks prevention
7. Risks identification and efficacy evaluation of the adopted protections
- a). Location and identification of the areas where the works involving special risks will be developed.
 - b). Risks identification and efficiency evaluation of the adopted protections
8. Collective protections to use
9. Individual protection resources to use
- a). Signposting of the risks
10. Safe working procedures of every Team member
11. Machinery and auxiliary resources
12. Planned Measures in case of accident
- a). First aids
 - b). First aids bag
 - c). Preventive medicine
 - d). Accident victims evacuation
13. Risks identification for possible later works
14. Useful plans and information for possible later works
15. Adopted system for the level of health and safety control during works
16. Formation and information about health and safety
17. Emergency evacuation plan during the assembly and disassembly periods
- Annex 1: Identification of risks and evaluation of the efficiency of the adopted protections.
- Annex 2: Identification of risks for possible later works.

Health and Safety Checklist

LEGAL CONTENTS	LOCATION IN THE REPORT OR IN DRAWINGS
Name and address of SDE 2014, HS Coordinator, Prevention authorities, Team	
Number of workers	
Contact information of the Site Operations Coordinator	
Description of works	
First aid procedure	
Name and number of first aid certificated worker	
Description of the Team's first aid kit.	
Description of hygiene conditions (toilet, changing room, restroom...)	
Detailed description of operating modes	
Risk assessment – risks generated by other	
Risk assessment – risks generated by environment	
Risk assessment – risks generated on other	
Risk assessment – self generated risks	
Procedures to adapt collective protection	

C. HS Specific Terms and Conditions Document

The HS Specific Terms and Conditions is the document that satisfies the French regulation according to the decree of December 26 -1994. For the SDE Competition, the following documents are required:

1. A statement in which the Team commits itself to avoid or minimize the risks derived from the work process.
2. A statement in which the Team commits itself to envisage the health and safety demands from all the people taking part in the project (decathletes, sub-contracted workers, etc.), and in which the Team declares to have considered those demands in the HS Plan.
3. Complete technical specifications of the collective protections that shall be used (see Rule 52.7.6).
4. Complete technical specifications of the individual protections that shall be used (see Rule 52.7.7).
5. A description of the terms and conditions of the Safety Plans that each Team member has to comply with.
6. A statement that all the Team members have passed specific medical examinations for the works that they will carry out and have the necessary qualifications. All Team members shall be properly identified in this statement and it shall clearly specify that all are of legal age.
7. A statement that the Team has received the specific training to assemble and disassemble the house that will be exhibited, preventing unexpected risks. All Team members shall be properly identified in this statement.
8. For contracted staff:
 - a). Medical examinations of the workers (see item 6)
 - b). Specific training (see item 7)
 - c). A statement of compliance with the Health and Safety Plan
 - d). If necessary, a specific description of the adaptation of their own procedures to the Health and Safety Plan (see 52.7.3.C).

Examples of the documents will be available through the SDE WAT.

52.2.3. Step 3: Preparing for construction works

The third step consists on developing all the previous measures planned to prevent risks. As described in the HS Report, in order to prevent risks, all the staff shall:

- Receive the appropriate training for the tasks that they will have to carry out: using machinery, power tools, etc.
- Obtain driving licenses and the necessary certificates (or licenses) for trucks, motorized platforms and all the necessary auxiliary measures.
- Attend first-aid courses.
- Undergo medical examinations.

All the certificates and documents derived from these activities shall be included in the HS Report (section 16), and in the HS Specific Terms and Conditions Document (sections 6 and 7).

Note: The SDE HS Area encourages all Teams to practice the assembly and disassembly processes prior to the Final Phase of the Competition in Versailles. This training may help minimize the hazard chances at La Cité du Soleil® by facing real risks', having a realistic feedback and identifying improvement areas. The team training is an important safety measure.

52.2.4. Step 4: Construction works

General requirements

During the final phase of the competition, Teams shall always keep in mind the measures described in the HS Plan, which are those that they have decided to assume.

The teams shall analyze all the solutions before starting with the works in order to avoid unexpected risks. Accordingly, Teams may modify the actions described in the HS Plan. For this end, Teams have to inform the SDE HS Area immediately and wait for their approval, as any change shall at least ensure the same safety level.

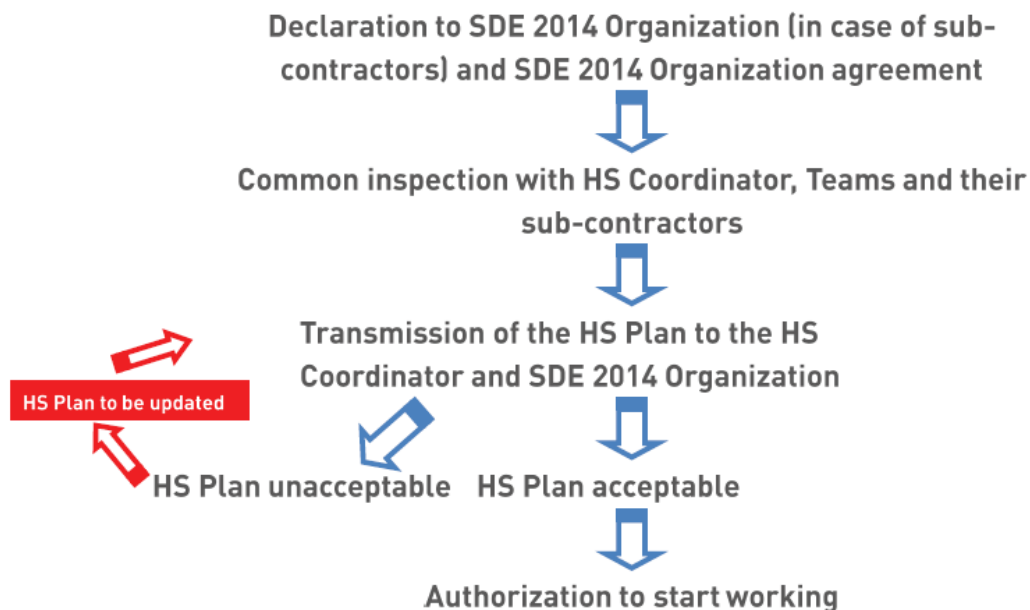
During the assembly, maintenance and disassembly the Team must identify and provide all the safety and associated controls that are necessary to ensure a safe work site and activities such as:

- Providing adequate lighting to safely perform work
- Establishing work schedules/shifts to ensure Team members have adequate rest to safely work on site (see Rule 52.7.4)
- Identifying other considerations related to the work each Team member will be performing.

During the assembly, maintenance and disassembly of the houses, it is mandatory to obey all the orders and instructions given by the SDE HS Area.



Conditions for site access and working authorization



52.3. SDE Health and Safety Area

As part of the SDE 2014 Organization, the SDE HS Area is the group of people in charge of Health and Safety, working to help Teams comply with the HS established objectives.

The SDE HS Area consists of:

- **HS Coordinator:** Person in charge of all the Area and Director of all the works. He is the Health and Safety Coordinator of La Cité du Soleil® during the construction, in compliance with French Regulations.
- **HS Inspectors:** People helping the HS Coordinator with the Health and Safety activities: checking out deliverables, realizing inspections during the construction, etc. During the HS Coordinator's absences, HS Inspectors have the same authority.
- **HS Observers:** As a complementary preventive measure, during the construction, the HS Area is supported by observers, which will inform of any incident taking place to the HS Coordinator. They may not give any type of orders to the teams.

The members of the SDE HS Area will be in constant contact with the SDE HS Coordinator. In case the works involve serious and imminent risks, the HS Coordinators or HS Inspectors will have the power to stop the works, as stated in the **French law for the Prevention of Labor Risks**.

Which says: A "serious and imminent labor risk" is the one which is rationally probable to take place in an immediate future, and may mean a serious damage for the health of the workers.

In case of exposition to agents susceptible to causing a serious damage to the health of the workers, it will be considered that there is a serious and imminent labor risk when an exposition to the mentioned agents is rationally probable to take place in an immediate future and would cause serious damage to health, even when they are not evident immediately.

52.4. HS Plan Approval

The Final HS Plan will be considered acceptable only when the SDE HS Coordinator certifies that all items are properly developed. When teams have their HS Plan with an acceptable level, the SDE HS Coordinator will issue them a certificate of approval.

Without the certificate of approval, the Team will not be authorized to assemble the house in the corresponding lot at La Cité du Soleil®.

Once the HS Plan has been accepted, the participating teams are responsible for making updates whenever the parameters change, and ask for a new approval. For example, if the Team did not plan to use a crane to place your house when your plan was submitted, but later on you decide that a crane will be necessary, you must update your plan accordingly, must ask for the updated HS Plan approval and wait for the SDE HS Coordinator authorization to start working.

52.5. Construction works control

During the competition, the SDE HS Area will participate in daily meetings with all the teams. The SDE 2014 Organization will give specific instructions based on the activities to perform throughout the day. Therefore, according to the experience during the previous days, the actions to be repeated or avoided will be indicated. Throughout the competition, the HS Coordinator, HS Inspectors and/or HS Observers will inspect the lots of all the Teams. The objectives of these inspections will be:

- Work with the Teams, helping them to solve any problem related with the HS Area.
- Verify compliance with the HS measures.
- Accordingly decide if bonus and/or penalties are to be applied
- If necessary, stop the works immediately (some activities or all of the works). As stated in Rule 52.2.2, the HS Coordinator and HS Inspectors have the authority to stop the works.

As mandatory, Teams must post a copy of the approved HS Plan on the team's lot during the complete final phase of the Competition. The SDE HS Area members may require it at any time.

52.6. Health and Safety Bonus and Penalties

Complying with the safety measures is a prerequisite for participation in the Competition. The SDE HS Area has the authority to apply bonus, penalties and/or act on the competition according to the following:

52.6.1. Bonus

After Deliverable #5, Teams complying with the three following items will obtain **up to 5 points of bonus** for the total score of the Competition:

- All the documents required for Deliverable #5 regarding Health and Safety are received on time.
- No explanations or additional documents are needed to complete the Health and Safety deliverable.
- The SDE HS Coordinator considers that the documentation submitted by the Team is complete enough to receive the certificate to work in La Cité du Soleil®.

52.6.2. Penalties

A. Teams will not receive any penalty if working in safe manner and following their HS Plan.

B. No penalties will be applied to trivial situations which are immediately corrected. However, Penalties may be applied in case of repetitive trivial situations.

C. To avoid risks and possible penalties, if a team has any doubt concerning the HS measures to be adopted for a specific task, they must confirm with the SDE HS Officers that the planned measures are adequate and sufficient.

D. If the HS Area detects any non-trivial HS fault the procedure will consist on:

1. Order the Team to stop the works immediately.
 - The HS Area will decide the number of Team members stopping (all the Team or only those involved in the fault).
 - The HS Area will decide if it is necessary to solve the fault before stopping. In this case, only the minimum number of Team members necessary will resolve the fault and will leave the lot once they have finished.
 - The HS Area will decide for how long the work is to be stopped.
 - If the HS Area stops all the works, it is absolutely mandatory to keep out of the lot for the time established. This time counting will start immediately after the last Team member called to stop is out of the lot. The Team shall wait for instructions from the HS Area to resume the works again.
2. In order to prevent recurrence, the SDE HS Area will meet with the Team to analyze the fault and indicate the measures to be taken to resolve this type of risk.
3. The HS Area will order the Team members involved in the task to immediately solve the problem.



4. Depending on the degree of the fault (see Rule 52.6.3), the HS Area may apply point or time penalties (stopping the works), or both. Moreover, in case of serious fault the HS Area may recommend the SDE 2014 Organization to adopt another kind of action. The penalties will be applied according to the Table 5.

5. In case of intolerable fault, the HS Area will meet with the SDE 2014 Organization to discuss the possible disqualification of the Team from the Competition.

The HS Area will fill in a report signed by the Safety Officer and the HS Area in which the degree of the fault, the details of the incident, and the measures taken, etc. are defined.

Table 10: Table of Penalties.

Grade	Qualification of fault	Points penalty up to ⁽¹⁾	Time stopping up to (minutes)
1	Trivial	1	0
2	Tolerable	2	30
3	Moderate	5	50
4	Important	10	100
5	Intolerable ⁽²⁾	20	240

(1) Point penalties will be applied only during assembly and maintenance phases.

(2) In case of intolerable fault, or reiterative faults that compromises the Health and Safety of students, the SDE HS Coordinator will meet the SDE 2014 Organization to evaluate the need to stop the works of the Team, as well as its immediate expulsion from the Competition.

The SDE 2014 Organization, through the SDE HS Coordinator, has the authority to determine the grade of every fault, and the penalty to apply (type and quantity). Any economic sanction will be applied as a deduction of the economic support derived from the M.O.U.

The French Administration, in compliance with current Laws, may impose sanctions (including economic, civil and/or penal), regardless those applied by the SDE 2014 Organization.

52.6.3. Degree of the faults

Grade 1. Trivial fault (with serious and imminent unexpected risks):

- Temporary lack of individual protections or incorrect use of them.
- Temporary incorrect work procedure.
- Temporary lack of the necessary signs.

Examples:

Not wearing a hard hat, without works taking place in higher levels.

Carrying excessive loads.

General signs in the entry of the lot removed and not replaced.

Grade 2. Tolerable fault (with serious and imminent unexpected risks):

- Lack of collective protections, or ineffective ones, with tolerable risks as a consequence.
- Repetitive degree 1 fault.

Grade 3. Moderate fault.

- Lack of collective protections, or ineffective protections, with moderate risks as a consequence.
- Systematic degree 1 fault, or repetitive with moderate risks as a consequence.

Not following the SDE HS area instructions, with moderate risks as a consequence.

Grade 4. Important fault.

- Lack of Collective protections, or ineffective ones, with important risks as a consequence.
- Systematic grade 1 fault, or repetitive with important risks as a consequence.
- Not following the SDE HS area instructions, with important risks as a consequence.

Grade 5. Intolerable fault.

- Negligent attitudes.
- Deliberate actions that cause or may cause important risks for the Team member or any other person.
- Not following the SDE HS Area orders given to the Safety Officers to resolve an expected serious and imminent risk.

52.7. Health and Safety Teams General Requirements

52.7.1. Team members in charge of Health and Safety

A. HS Team Coordinator

HS Team Coordinator is the team member in charge of Health and Safety at La Cité du Soleil®, and has the ultimate responsibility for the development and enforcement of the Team's HS Plan. French regulations identify the HS Team Coordinator as the Health and Safety Coordinator during the construction. This person is responsible for health and Safety of the whole Team: including every operation of each of the team members. This includes: students, faculties, contracted staff, etc.

The HS Team Coordinator during the design process is the person who signs the HS Plan, certifying the truthfulness of the information submitted, and is responsible for every decision established in the HS Plan. In compliance with French Construction and Housing Code, it is mandatory that the HS Team Coordinator (during design and construction) has a qualified university degree, according to its responsibilities, which, among other, may be:

- Architect
- Building Engineer
- Engineer
- Technical Engineer

Moreover, it is mandatory to clearly identify the HS Team Coordinator in the HS Plan.

Note: The SDE HS Area suggests that a Faculty or another person with authority in the team assumes the role of HS Team Coordinator, during design and construction.

B. Safety Officers

The Safety Officers are in charge of the safety measures observance. The French Regulations identify Safety Officers as preventive resources. As mandatory, Teams must designate Safety Officers and must clearly identify them in the HS Plan.

Safety Officers need to be persons with:

- Enough knowledge of the assembly/disassembly process
- Enough experience to identify risks and to look for the best way to solve them.
- Enough authority inside the team to lead the rest of the team members, and to stop the activities or all the assembly or disassembly process when necessary.

As responsible for developing and enforcing the team's Health and Safety Plan, the HS Team Coordinator (or at least one of the HS Officers) must be in the lot while any activity is being carried out inside. It is also mandatory for them to have a distinctive sign so that they can be easily identified among the members of the Team. The SDE 2014 Organization will provide special hard hats for the Safety Officers and the HS Team Coordinators of all the teams.

52.7.2. Relationship with the SDE HS Area

The SDE HS Coordinator and SDE HS Inspectors will announce the orders only to the HS Team Coordinator or Safety Officers, who will be responsible for informing the rest of the Team. The HS Area will only talk to the rest of the team in case of imminent important risks.

The HS Team Coordinator and/or Safety Officers will participate in daily briefings at La Cité du Soleil®.

Moreover, they are encouraged to hold a similar daily briefing with the rest of the members of the team to inform them of the instructions given by the Organization.

52.7.3. Contracted staff

Any contracted staff will be considered as another Team member. It is mandatory for all the contracted staff (truck drivers, crane controller, etc.) to comply with the SDE Rules and French Regulations.

A. It is important to demand the contracted staff the observance of French regulations (and include them as mandatory items) before signing the contract with them. This will guarantee that all the Labor risks during the development of their work will be resolved by themselves.

B. SDE 2014 Organization may apply penalties to the team because of the actions of their contracted staff.



C. HS Plan must include the activities to be developed by the contracted workers following one of the two possible options:

1. (Preferable): The contracted company or workers accept to comply with the HS Plan of the Team, in all the aspects concerning their work, and declare to observe the whole document. In this case, the Plan must include a statement signed by the contracted workers with their acceptance. A detailed HS Plan must include the complete description of all the works to be done. Teams shall ask the contracted staff to help them develop the Health and Safety Plan sections where the tasks in which they will be working are included.

2. In compliance with the **French law for the Prevention of Labor Risks**, Teams may ask the contracted staff to develop a HS Plan with their own measures. This means:

- The Team makes the HS Plan
- All contracted workers or employees do their own HS Plan document, with the same index, but only including the work activities that concern them. It is necessary to indicate that this document is the HS Reformed Plan from the HS Plan of the team regarding the items that concern the contracted staff.
- Item 8 of the HS Specific Terms and Conditions Document must include a reference to these documents.

52.7.4. Working Shifts and Resting

A basic measure to reduce risks is to guarantee the rest of the Team members, as a high number of accidents are due to the tiredness or lack of concentration. A strict planning of activities and shifts among the Team members, help prevent this risk and fulfill the mandatory French Regulations.

In compliance with the Local Regulation, the maximum number of working hours is 7 hours per day and worker. Therefore, Teams are recommended to organize three working shifts of 8 hours, including 1 hour for lunch and a 15 minutes break for each shift. Teams are also encouraged to have a specific area for having lunch or resting, or even better, to order Team members to leave the lot while resting.

The working shift regulation must be considered to decide the number of team members and/or HS Officers that will be necessary at La Cité du Soleil®. As stated in Rule 52.7.1, a HS Officer or the HS Team Coordinator must be in the lot while any activity is being carried out inside.

During the construction works, the SDE HS Area may demand Teams the daily list of Team members for every shift, as well as the schedule for each one.

52.7.5. Emergency and Accident Procedures

A. HS Plan shall include all the information concerning this subject:

- HS Drawings: location of first aids bag, route to the health center, planned signposting, etc.
- HS Report: Items 12, 13, 16 and 17, etc., shall indicate information like: insurance that will cover their stay in Versailles, the health center (in accordance with the insurance instructions), etc.

HS Specific Terms and Conditions Document. If appropriate, when indicating the Team members' education/training, Teams shall include information about accident procedures, first aids, etc.

B. Before start working

- Teams are encouraged to realize an emergency training prior to the final phase of the Competition, including a visit to the health center (especially to familiarize all the team with the fastest way to get there) in accordance with the insurance instructions.

C. During the construction works

- As stated in Rule 52.2.2, the Evacuation Plan must be kept visible inside the lot (using, for example, a waterproof mobile signpost) during the final phase of the Competition. Moreover, each Team worker must have a copy of it and keep it with him during their working periods.

- Regardless the HS measures of the SDE 2014 Organization, every team shall have a first-aid box inside their lot.

- During each shift there must be a Team member responsible for first aid, being a qualified trained person on the subject. Moreover, all the Team members are encouraged to have first-aid training.

D. In case of accident

- Act as described in the HS Plan: evaluation, first aid, etc.
- Evaluate the emergency. Take in the whole picture.
- Call or notify the SDE 2014 Organization
- If necessary, ask the SDE 2014 Organization for any type of additional help.

Information regarding the actions protocol in case of accident, in coordination with the SDE 2014 Organization, will be available through the SDE WAT

52.7.6. Collective protections

All Teams shall provide every work unit with collective protections, during the assembly, maintenance and disassembly phases of the house. All team members, crew and volunteers that will use the collective protections need to be trained on their proper use, inspection, and limitations. Concerning complete technical specifications of the collective protections: in accordance with the current French Legislation, all the protection equipment, auxiliary means, machinery, etc. shall have the «CE» branding, guaranteeing their adaptation to the regulation in force. In case of scaffolds, this premise may be exceptionally replaced by the possession of a fulfillment certificate of Rule NF, ISO or AFNOR; during their use, fulfilling **French law for the Prevention of Labor Risks**, which also regulates the ladders and the hanging works by means of ropes.

52.7.7 Individual protection

Each team has to provide their staff (team members and crew) with protective and safety equipment, “Personal Protective Equipment” (PPE), during the assembly and disassembly phases of the house. This equipment should also be available whenever considered necessary (for example during maintenance operations).

All team members, crew and volunteers need to be briefed on the proper use, inspection, and limitations of the PPE.

Concerning complete technical specifications of the individual protections: in accordance with the current French Legislation, all the protection equipment, auxiliary means, machinery, etc. shall have the «CE» branding guaranteeing their adaptation to the regulations in force. During the assembly, maintenance and disassembly phases, a minimum level of PPE is mandatory and required at all times:

- Hard hat (white or yellow color)
- Safety glasses
- A shirt with sleeves and long trousers
- Safety boots with ankle supports.
- Reflective jacket (yellow color)
- Additional PPE or safety equipment must be used if required for the task being performed.

The SDE2014 Organization will provide specific hard hats for the following team members in order to easily identify them on the workplace:

- The Site Operations Coordinators
- The HS Team Coordinator
- The Safety Officers

Teams will have to clearly identify the crane signal person writing in black-colored capital letters the term “BANKSMAN” on the back of the reflective jacket of the designated people.

Important reminder: only the SDE2014 Organization will use the orange color for hard hats and reflective jackets. Teams are not allowed to use this color for this equipment.

52.7.8. Vehicles in La Cité du Soleil®

Regardless the additional measures to adopt, in order to guarantee all risks are resolved, when trucks or any other vehicle is moving in La Cité du Soleil®:

- The speed of the trucks will adapt to the step of a man.
- One person must walk in front of the truck
- Another person must walk behind the truck

These two people will have to:

- Establish the maximum speed of the vehicles
- Direct the movements of the truck
- Avoid the accidents with people, with the rest of vehicles and/or with the different elements of La Cité du Soleil®.

52.7.9. Loads operation

French Regulation establishes specific limitations on the loads to be carried out by people. In accordance with the **French law for the Prevention of Labor Risks**, the maximum load to be carried out by one single person is 25 kg.

