



# **PACES: Preparedness for Appropriate Accommodation in Emergency Shelters**

**Emergency Shelter Planning and Implementation  
Camp Management & Safety    Logistics needed**

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*Dipartimento della Protezione Civile*



**Project co-funded by the EU Humanitarian Aid and Civil Protection**



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# WHAT ARE WE GOING TO TALK ABOUT?



**NATURAL DISASTER - EARTHQUAKE**



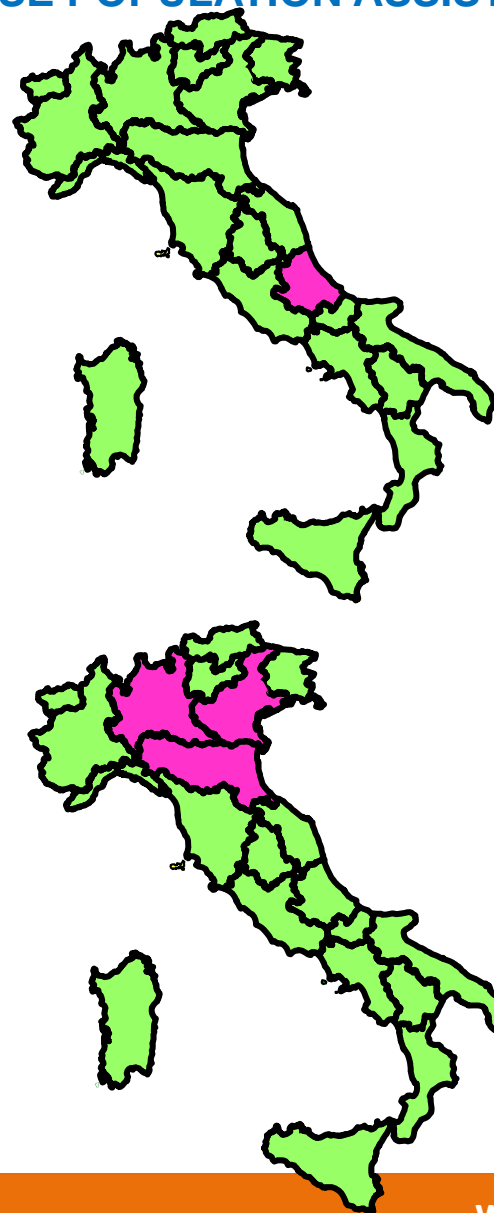
## ITALIAN CIVIL PROTECTION EXPERIENCE

### NATIONAL EMERGENCY - FIRST PHASE POPULATION ASSISTANCE

AQUILA EARTHQUAKE	Max value
Displaced people	67.459 In Tents → 35.690 <b>In Hotel → 31.769</b>
Tents camps	171



EMILIA ROMAGNA EARTHQUAKE	Max value
Displaced people	16.564 In Tents → 11.321 <b>In Hotel/Other Structures → 5.243</b>
Tents camps	41



#### 1 Region

Abruzzo

#### 2 Provinces

L'Aquila

Teramo

#### 3 Regions

**Emilia Romagna**  
(4 Provinces)

**Lombardia**  
(1 Province)

**Veneto**  
(1 Province)



## MAIN LOGISTICS WAREHOUSES FOR EMERGENCY RESOURCES

**CIVIL PROTECTION DEPARTMENT**

**MINISTRY OF INTERIOR - REGIONS**

**ITALIAN RED CROSS**





PACES: Preparedness for Appropriate accommodation in Emergency Shelters



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## REGIONAL LOGISTICS WAREHOUSES FOR EMERGENCY RESOURCES

### CIVIL PROTECTION REGIONAL MODULES SYSTEM



#### TENT CAMP MODULE

##### 2.1 Modulo assistenza alla popolazione (h6) -standard

Dimensionato per 250 persone sfollate **250 PEOPLE**

###### Squadra operativa

Coordinamento: 1  
Assistenti/animatori (con formazione di tipo assistenziale di cui uno psicologo): 6

###### PERSONNEL

Totale Squadra: 7

###### Confezionamento

- 5 Container 10" (3x2,5 m) per 42 tende p.i.88
- (o 8 Container 10" (3x2,5 m) per 32 tende pneumatiche)
- 6 Container 10" (3x2,5 m) per 18 bagni
- 4 Container 10" (3x2,5 m) per 12 docce
- 2 Container 10" (3x2,5 m) per 250 brande + effetti letterecci
- 1 Container 10" (3x2,5 m) per cisterne acqua
- 1 Pianale o rimorchio per generatore 150 kW
- 1 Carrello per torre faro + gruppi illuminanti
- 1 Carrello per struttura info point

###### PACKING

###### Attrezzatura

- 42 tende tipo PI 88 (ministeriale) da 6 posti (o 32 tende pneumatiche da 8 posti) complete di impianti e termoriscaldatori
- 250 brandine pieghevoli
- pavimentazione mobile sotto tenda (grelle livellanti)
- recinzione leggera
- 18 bagni (3 moduli da 4, 2 moduli da 2 di cui uno per disabili)
- 12 docce (2 moduli da 4, 2 moduli da 2 di cui uno per disabili)
- 4 serbatoi acqua da 1000 l cadauno
- 1 generatore da 150 kW silenzioso carrellato o 2 generatori da 80 kW
- 1 quadro generale
- 10 quadri di zona
- 1 torre faro da 2 kW con generatore da 12 kW, altezza faro >8 m
- 8 gruppi illuminanti da 600 W (di cui 4 tipo tower e 4 carrellati)
- 1 struttura organizzativa (Info Point) dedicata alle persone sfollate, con possibilità di autogestione da parte delle persone sfollate

###### RESOURCES

#### TRANSPORTATION

###### Trasporto

4/5 Bilici per 16/20 container 10"

- 1 Autocarro cassonato (6 m) c/gru per generatore 150 kW
- 1 Autocarro cassonato (6 m) per 2 container 10"
- 2 Fuoristrada per traino carrelli



#### NEEDED AREA

Superficie minima necessaria (70x60) m = 4200 m<sup>2</sup>





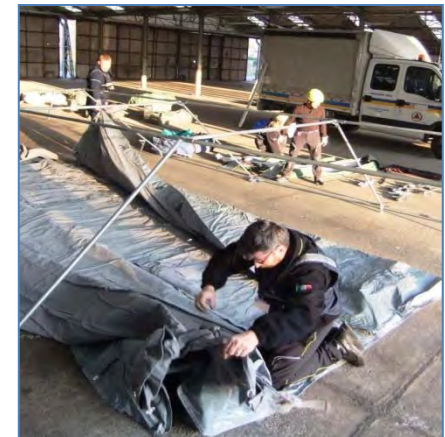
## LOGISTICS PLANNING PRINCIPLES

Interoperability  
Effectiveness  
Efficiency  
Flexibility  
Semplicity

Optimization  
Promptness  
Synergy  
Quality requirements  
Safety requirements



**Maintenance**





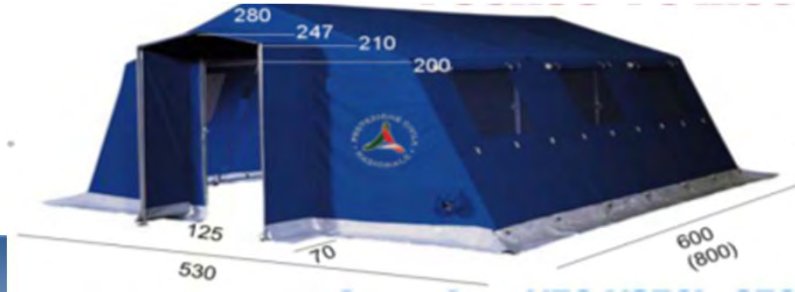
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## CIVIL PROTECTION DEPARTMENT MAIN RESOURCES



Pneumatic tent



Autostable - Iron frame - tent



Air Conditioner



Power Generator



Light Tower



Field electrical system



Multipurpose Modular tent

## TRANSPORTATION



Basic Training – Malta (13<sup>th</sup> – 16<sup>th</sup> June 2016)

[www.paces-project.eu](http://www.paces-project.eu)



## PNEUMATIC TENT



Mt. 7,55 x 5,60  
Square mt. 42,28  
**Weight: kg 314**



Plus accesories:  
Electrical system : kg 45,  
Floor tile: kg 182,  
Dust carpet: kg 107,  
Shading cover: kg 46,  
Repair kit. Kg 18,  
**Weight: kg 398**



**Empty basket: kg 130**



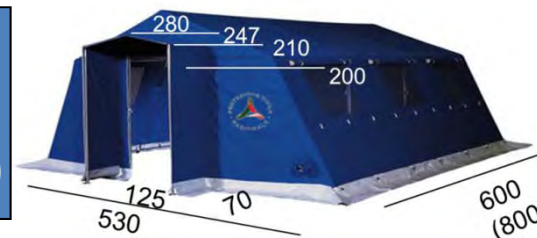
L: 201 cm.  
P: 122 cm.  
H: 97 cm.  
M³: 2.378

**Total Weight:  
kg 712**



## AUTOSTABLE TENT 3/4 ARCHES

Mt. 6/8 x 5,30  
Square mt 31/42  
**Weight: kg 210/250**



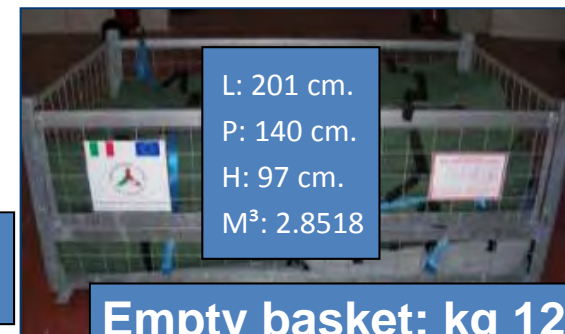
Plus accesories:  
Electrical system: kg 27,  
Floor tile: kg 144,  
Dust carpet: kg 66  
**Weight: kg 237**

Inner tent bag: kg 60  
Fly sheet bag: kg 60  
Stakes and poles bag: kg 67  
Stakes and poles bag: kg 64



**Total Weight:  
kg 487**

L: 201 cm.  
P: 140 cm.  
H: 97 cm.  
M³: 2.8518

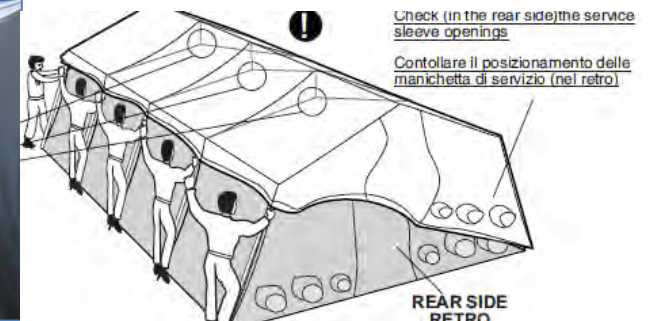


**Empty basket: kg 125**



## *Nepal earthquake – April 2015*

### **PNEUMATIC TENT vs AUTOSTABLE TENT** **Disavantages and vantages**





## ***SUITABLE AREA TO SET UP THE CAMP*** **ENVIROMENTAL ASSESSMENT**



Flat ground



Public property



No floods area



No stagnant water  
ground



No steep slope



No chemical Plants



**Safe area to floods, landslides,  
forest fires, chemical plants**

**Close to water, sewage,  
electrical, telecommunication  
systems;  
drainage system;**

**Good connection to road  
network, accessibility of heavy  
vehicles;**

**Close to urban center,  
availability of facilities;**

**Availability of space for  
warehouse, public services,  
parking areas;**

**Fencing system.**



## No local emergency planning

**AREE E CENTRI DI ASSISTENZA O RICOVERO DELLA POPOLAZIONE**



Le Aree e centri di Assistenza o Ricovero della popolazione sono "Strutture esistenti" (specie per il rischio idrogeologico) quali ostelli, alberghi, strutture militari, etc.), o luoghi in cui saranno allestite tende - "Aree campali" (specie per il rischio sismico) - in grado di assicurare un ricovero alla popolazione colpita.

I requisiti sono:

- sicurezza del sito a frane, crolli, allagamenti, incendi boschivi e di interfaccia, etc.;
- vicinanza a reti idriche, elettriche e fognarie;
- sicurezza del percorso per il raggiungimento dell'area;
- eventuale polifunzionalità.



Well known size;  
Drainage, electrical system;  
Water and sewage system;  
Fencing system;  
Parking area;  
Good road network accessibility.



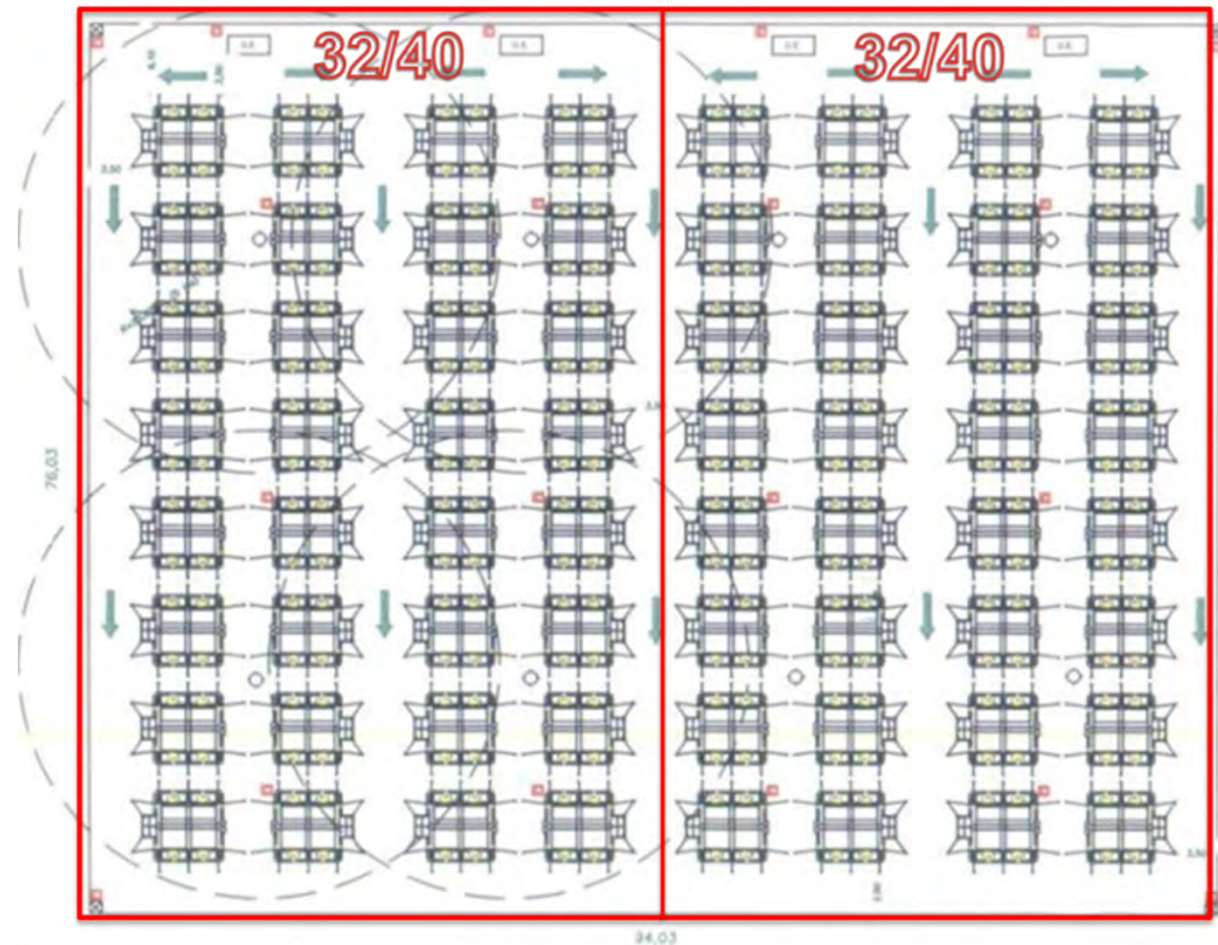
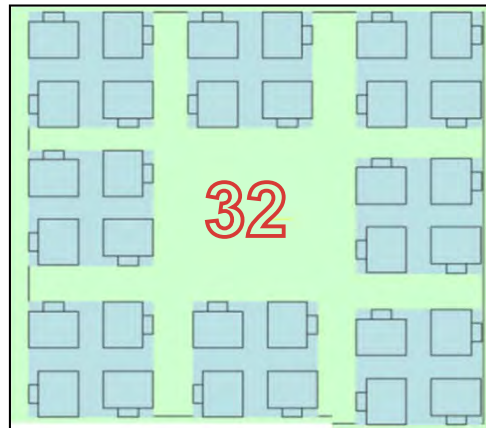
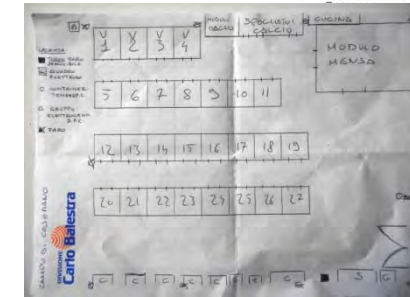
## ***THE CAMP LIFE CYCLE***

- **SET UP**
- **CARE AND MAINTENANCE**
- **CLOSURE**



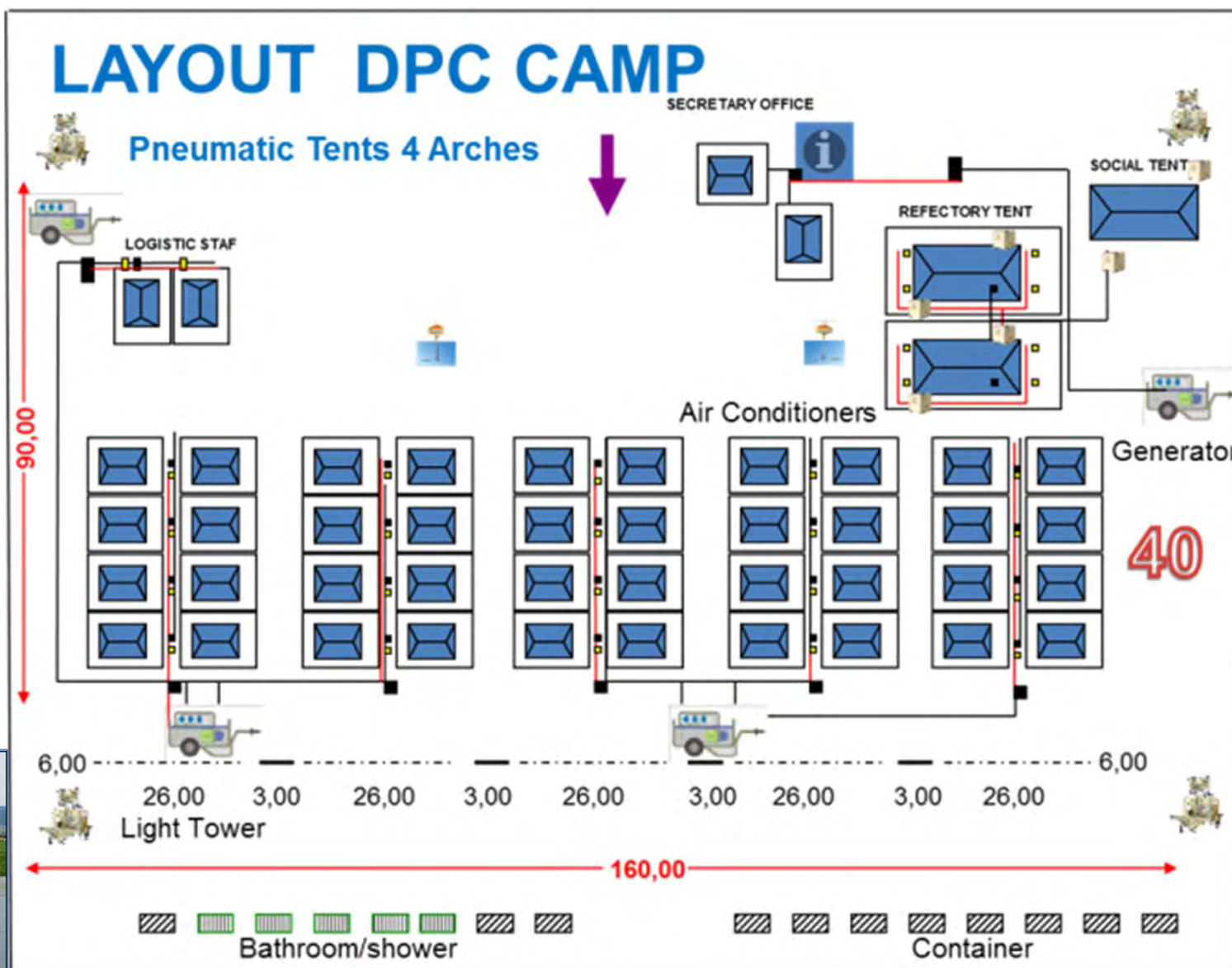


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## *Basic standards*

**Extention: 1-2 ha**

**People: 250-500 - (32-64 tents) – 1-2 Modules**

**n.1 tent for family**

**Field kitchen and dining tent**

**n.1 toilet per 12 units**

**n. 1 shower per 20 units**

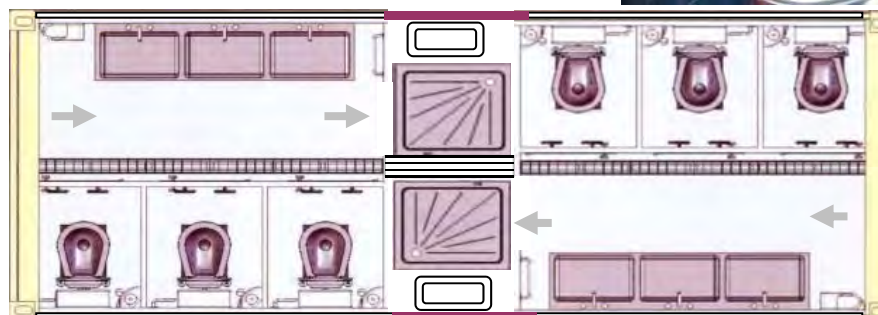
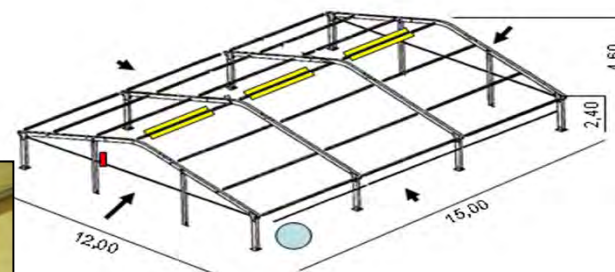
**Toilet and shower for disabled people**

**Warehouse**

**Logistics for operators**

**Parking area**

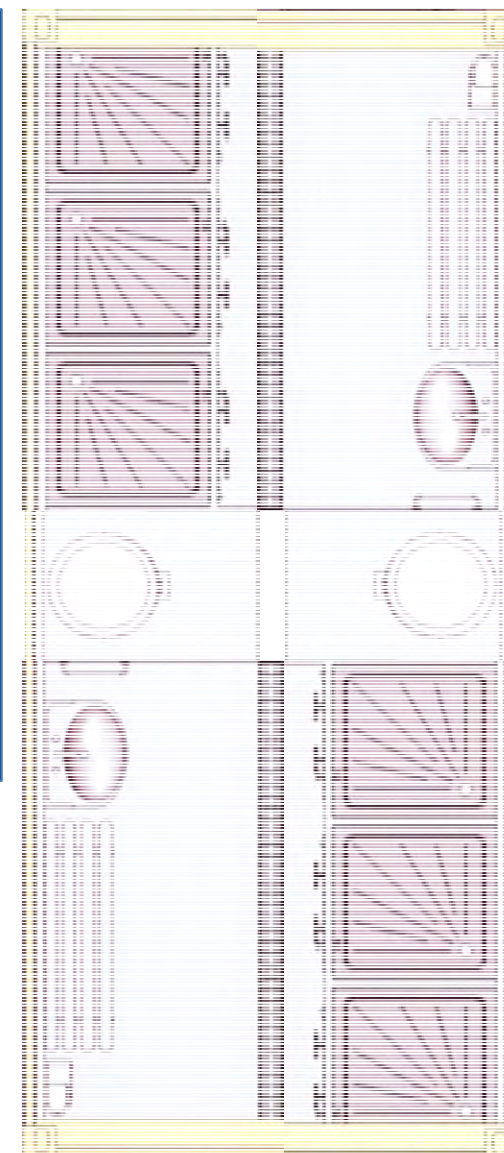
**Services area**





## *Supply services*

**Energy supply - 3 KW per tent**  
**Ground electrical system**  
**Field lightning**  
**Chemical toilets**  
**Sanitation**  
**Sewer system**





## Supply services

Cooking area

Chiller zone

Warehouse

Water tank

Unloading zone

Meals distribution area

Dining area

Waste zone



في المحفل 1. رئيسون فينا له ايملا  
(منتزه الاعباب)  
لجميع السكان  
الايام والذوقات التالية  
مبيت: من 10 الى 12 / ومن 12 الى 14 مساء  
تحد: من 3 الى 12 / ومن 12 الى 14 مساء  
ومن 14 الى 18 مساء  
لعلاج يستغرق 50 دقيقة





## ***Additional services***

**Kindergarten – Schools**

**Bank mobile office/ATM**

**Post Office**

**Pharmacy**

**Library**

**Church**

**Laundry and ironing area**

**Local Authority office**

**Internet**





## EDUCATIONAL SYSTEM





## ***PEOPLE CAMP MANAGEMENT***

### **Different kinds of families – specific demands**



**Young Couple**



**Elderly**



**Family with children**



**Extended Family  
grand parents - pets**



**Widower Widow**



**Domestic detention**



**Single parents**



**Locals married with foreigners**  
**Tourists Consular assistance**



**Ethnic groups**

### **THE CHALLENGE: REGISTRATION METHODOLOGY**



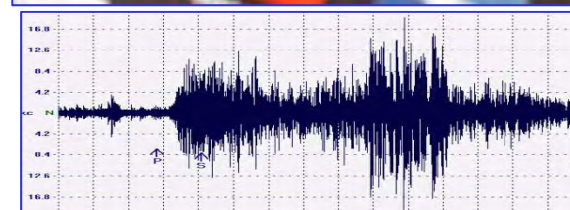
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## COMMUNICATION AND INFORMATION MANAGEMENT

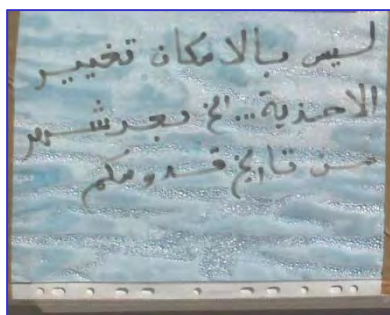
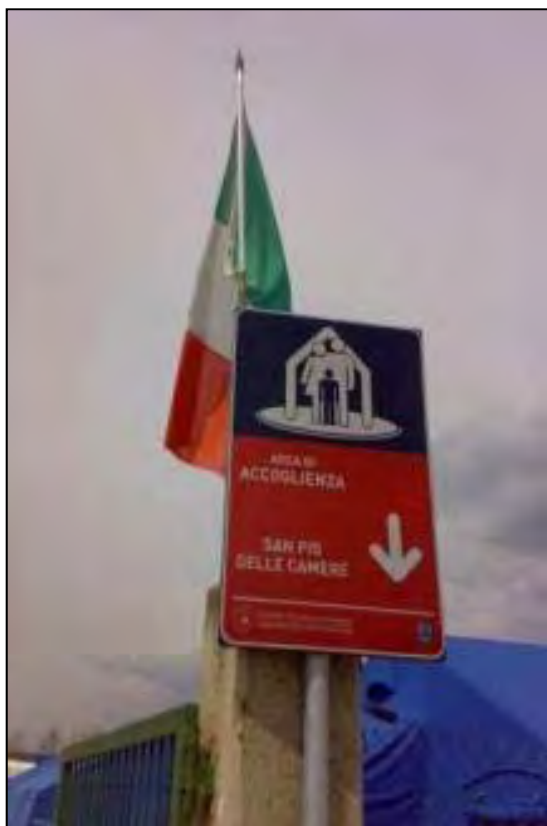


**EMERGENZA TERREMOTO  
EMILIA  
SMS SOLIDALE  
45500**





## *Communication and information*





## **COMMON DIFFICULTIES**

**Damage to private buildings and number of displaced people**

**No local emergency planning**

**Built environment, urbanization**

**Road network damaged**

**Spontaneous camps**





## **COMMON DIFFICULTIES**

**Huge request of gravel, bulldozer, forklifts, etc.**

**Season time - climate condition**

**Request of population to stay close to their houses/farms**



**Pets**





## ***COMMON DIFFICULTIES***

**Population census**

**Voting, elections**

**Safety standards**

**Domestic detentions**

**Waste management**

**Camp warehouse**

**Camp closure disassembly**





## ***WEATHER CONDITIONS***





## *Some examples Different shapes*



Villages



Towns



Urban and ground morphology



Parking area



Flexibility



Landing area



## *Not only tents*



***THANKS A LOT FOR  
YOUR KIND ATTENTION***

**Stefano Ciavela**

*Presidenza del Consiglio dei Ministri*

*Dipartimento della Protezione Civile*