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M.Sc. Computer Science and Engineering
Hypermedia Applications Project

Design Report

PLUG|T

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GitHub Repository:
www.github.com/lucagrammer/Plug-IT

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Abstract

Plug-IT is a medium-sized Italian company operating in the ICT sector that needs a website to show the information related to its services. The goal of this document is to provide a functional and visual description of the website to be implemented. In particular, it aims at describing the main design choices through models, schemas and use case scenarios. Furthermore, it will also present the structure of the database from both a conceptual and logical viewpoint.

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Contents

Introduction

Requirements

Plug-IT is a medium-sized Italian company operating in the ICT sector that needs a website to make itself known and to show its offers. The system must show all the information relating to the *areas* (more than 3) in which it operates and the related *services* (more than 30) it offers.
In addition to the *general description* of the company and its contacts, all information about the *people* (more than 20) working at *Plug-IT* must be shown in detail.
In particular, some relationship must be evident on the website:

- People are related to areas (and vice versa) in different ways, e.g., because they are responsible for an area or because they work in an area

- People are related to services (and vice versa) in different ways, e.g., because they are project manager or because they are reference for assistance for a service

- Services are related to the areas they belong to (and vice versa)

Purpose

The goal of this document is to provide a functional and visual description of the website to be implemented. In particular, it aims at describing the main design choices through models, schemas and use case scenarios. Moreover, it will also present the structure of the database from both a conceptual and logical viewpoint.

1. Conceptual Design

The conceptual design of the website is detailed in this chapter. In particular, the choices relating to the contents, their mapping into pages and the navigation between them will be explained in detail in the following.

1.1. Content Design

This section describes the *C-IDM (Content Interaction Dialogue Model)*, which is a model that represents the website in terms of a dialogue between the human and the application. In particular, it explains what the dialogue is about and how the subjects of conversation are classified, mutually related and grouped. It also provides information on what can be said about each of these categories.

1.1.1. C-IDM Diagram

The core of the model consists of the three main kind of topic *Services*, *People* and *Areas* that are interrelated. The kind of topic *Areas* consists of all the fields in which the company operates. For each of them, there is a responsible and at most eight other workers. Every *Area* is also associated with one or more services. Each *Service* employs a project manager and has multiple references for assistance. Furthermore, the diagram highlights the association between the people and the areas in which they operate. Another kind of topic concerns the *Events* organized monthly by the company: they regard a specific field and generally involve one or two employees. Finally, the schema contains other two single topics: the first concerns a general description of *Plug-IT* while the other one deals with how to reach or contact the company.
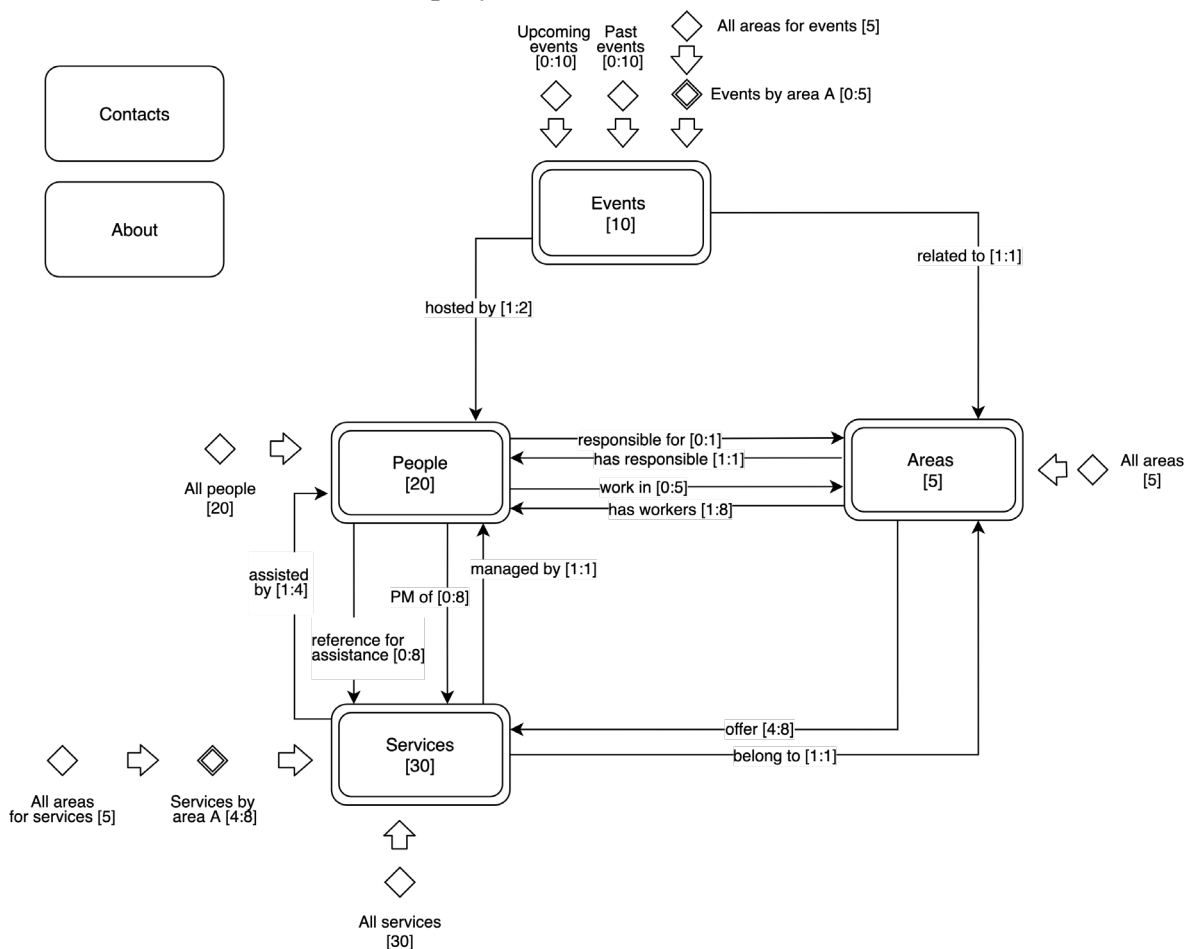
C-IDM in-the-large diagram

1.1.2. Content Tables

In the following tables are defined the contents of the conversation between the human and the application for each category of subject.

KIND OF TOPIC: *People*
Employee name: text
Position name: text
Employee photo: image
Employee bio: text (max. 150 words)
List of managed areas [area name]
List of tasks [service name, area name, task role]

KIND OF TOPIC: *Areas*
Area name: text
Area overview: text (max. 250 words)
Area responsible (employee name)
Area team: list of people [employee photo, employee name, position]
List of area services [service name]

KIND OF TOPIC: *Services*
Service name: text
Service area: text
Service description: text (max. 300 words)
Project manager (employee name)
Reference assistants: list of people [employee name, task role]

KIND OF TOPIC: *Events*
Event title: text
Event area: text
Event description: text (max 200 words)
Event hosts: list of people (employee name, position)
Event details (date, time, location, map)

TOPIC: *About*
Company overview: text (max. 500 words)

TOPIC: *Contacts*
Office information (address, phone, email, map)

1.2. Navigation Design

This chapter describes the mapping between the content identified in the previous sections and the pages that will be implemented. Furthermore, it includes the *P-IDM (Page Interaction Dialogue Model)* diagram, which visually represents the choices made during the design of the high-level navigation topology.

1.2.1. Content tables - pages mapping

The following tables detail the mapping of the previously identified contents into pages.

- **KIND OF TOPIC:** *People*

INTRODUCTORY PAGE: *People Page*
People introduction: text (max. 150 words)
Grid of people [employee name, position, employee photo]

TOPIC PAGE: *Person Page*
Employee name: text
Position name: text
Employee photo: image
Employee bio: text (max. 150 words)
List of responsibilities [area name]
List of tasks [service name, service area, task role]

- **KIND OF TOPIC:** *Areas*

TOPIC PAGE: *Area Page*
Area name: text
Area overview: text (max. 250 words)
List of services [service name]

TRANSITION PAGE: *Area Team Page*
Area name: text
Area responsible (employee name)
Area team: list of people [employee name, position]

- **KIND OF TOPIC:** *Services*

INTRODUCTORY PAGE: Our Services *Page*
List of services [service name, area, short description (max. 10 words)]

TOPIC PAGE: *Service Page*
Service name: text

Service area: text
Service description: text (max. 300 words)

TRANSITION PAGE: *Service Team Page*
Service name: text
Service area: text
Project manager name
Reference assistants list [employee name, task role]

- **KIND OF TOPIC:** *Events*

INTRODUCTORY PAGE: Events *Page*
List of events [event name, area, date, time, short description (max. 20 words)]

| **TOPIC PAGE:** *Event Page* |
|---|
| Event title: text |
| Event area: text |
| Event description: text (max. 200 words) |
| Event hosts: list of people (employee name, position) |
| Event details (date, time, location, map) |

- **TOPIC:** *About*

PAGE: *About Page*
Company overview: text (max. 500 words)

- **TOPIC: Contacts**

PAGE: *Contacts Page*
Office information (address, phone, email, map)

1.2.2.   P-IDM Diagram

This paragraph includes the *P-IDM (Page Interaction Dialogue Model)* diagram which shows how content is aggregated on pages and how pages of the same or different topics are linked together.
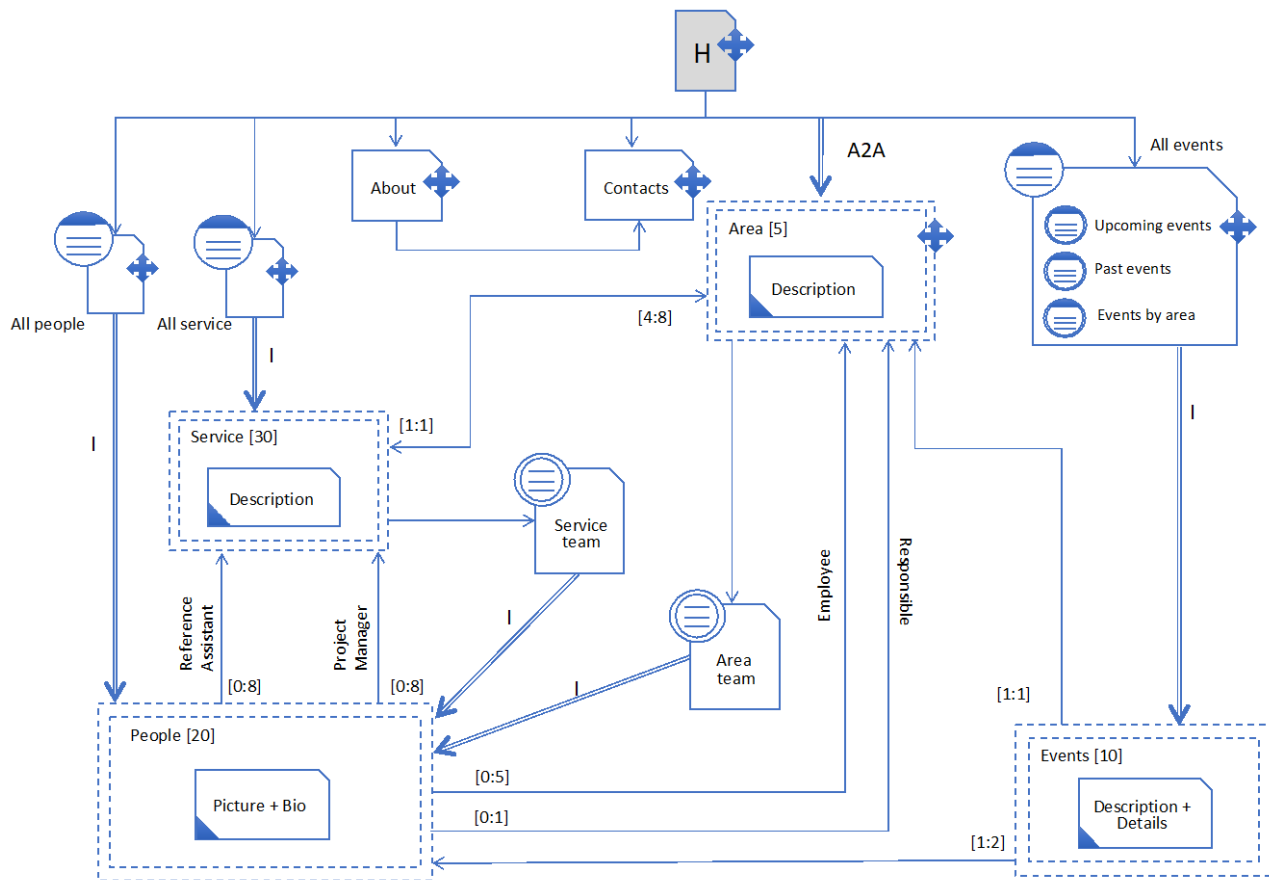
P-IDM Diagram

The landmarks of the website consist mainly of links to the introductory pages for the kind of topic *Services*, *People* and *Events*. Moreover, they enable access to the individual topics' pages *About* and *Contacts* from the entire website. Landmarks also include direct links to the multiple topic pages dedicated to the *Areas*.

As illustrated in the diagram above, the introductory pages to the *People* topic allows you to navigate between the individual employees through an *index pattern*. Besides, each of these multiple topic pages contains *transition links* to the areas or services in which the person works.

Similarly, the *Services'* multiple topic pages can be reached both through an introductory page (according to the *index pattern*) or by exploiting *transition* (bidirectional) *links* from the pages of the related areas.

On the other hand, two *transition pages* have been provided to make it possible to reach the profiles of employees involved in a specific area (*Area Team Page*) or service (*Service Team Page*).

Finally, the diagram includes an additional introductory page relating to the *Events*. From this section, the events can be filtered by area or by upcoming/past. Once again, the *group links* to the individual pages of the *Events* are managed according to the *index pattern*.

2. Visual Design

This chapter concerns the definition of the graphical structure of the website to be implemented. Each page will be represented via a low-fidelity wireframe and a high-fidelity prototype.
The former shows what the page offers and the basic visual organization of the content, navigation and interaction elements on the screen. The latter defines the advanced "look and feel" of the interface, using real content. In both the representations, all the main links will be carefully highlighted.

2.1. Home Page
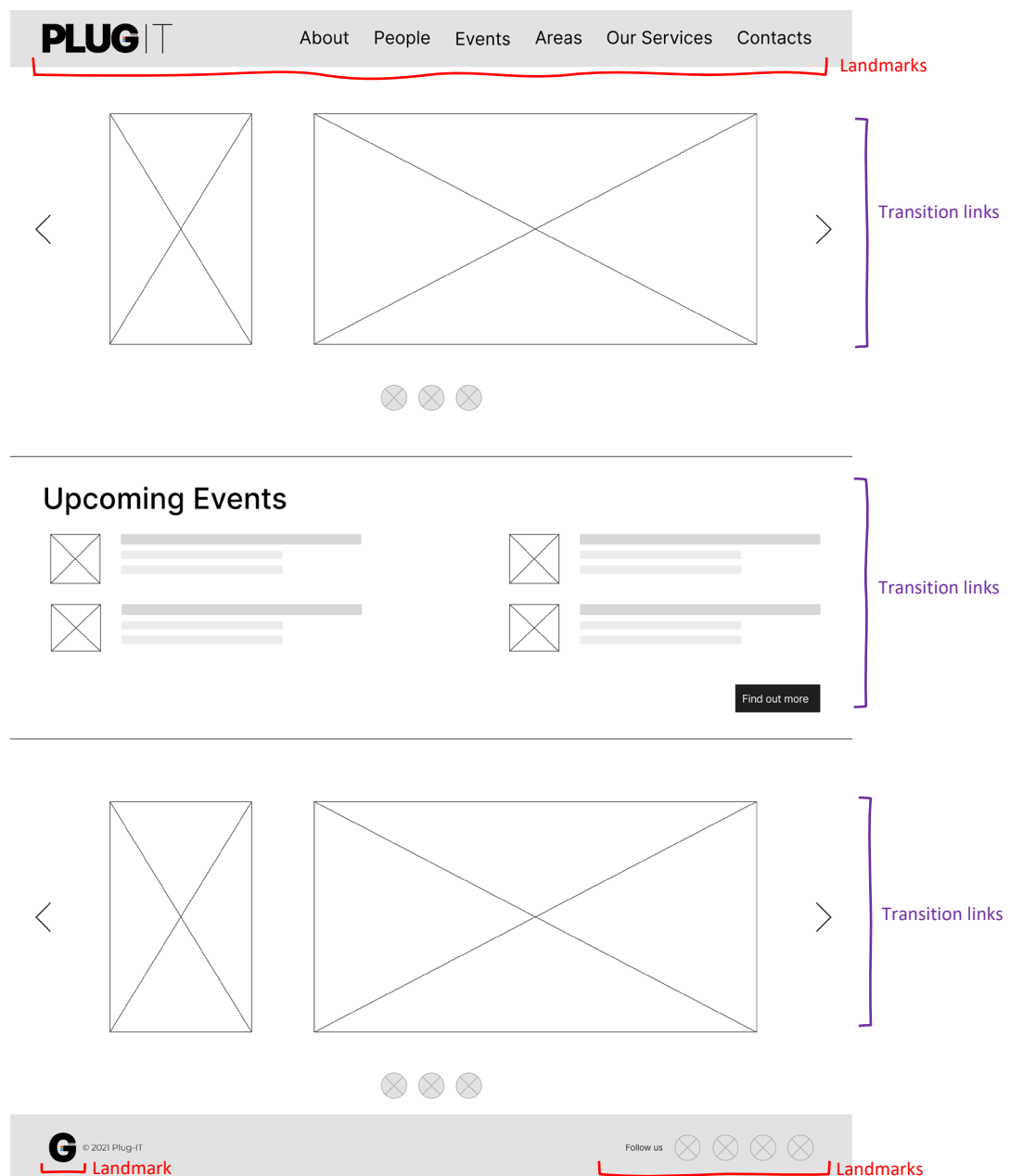
Wireframe 1: Home Page

The *Home Page* is the starting point for the user experience on the website. The central communication purpose here is to establish the brand, encourage visitors to dig deeper into the rest of the site and, ultimately, convert them into loyal customers. The solution adopted for *Plug-IT* offers a summary of the website content.

As shown in the wireframes, the *Home Page* is composed, at the top, of an image slider that displays an overview of the company's most famous services and those recently added to the catalogue. Furthermore, there is a section containing *transition links* to the next four scheduled events as well as a direct link to the introductory page of the events. Finally, the *Home Page* contains an additional slider that briefly presents the areas in which *Plug-IT* operates.
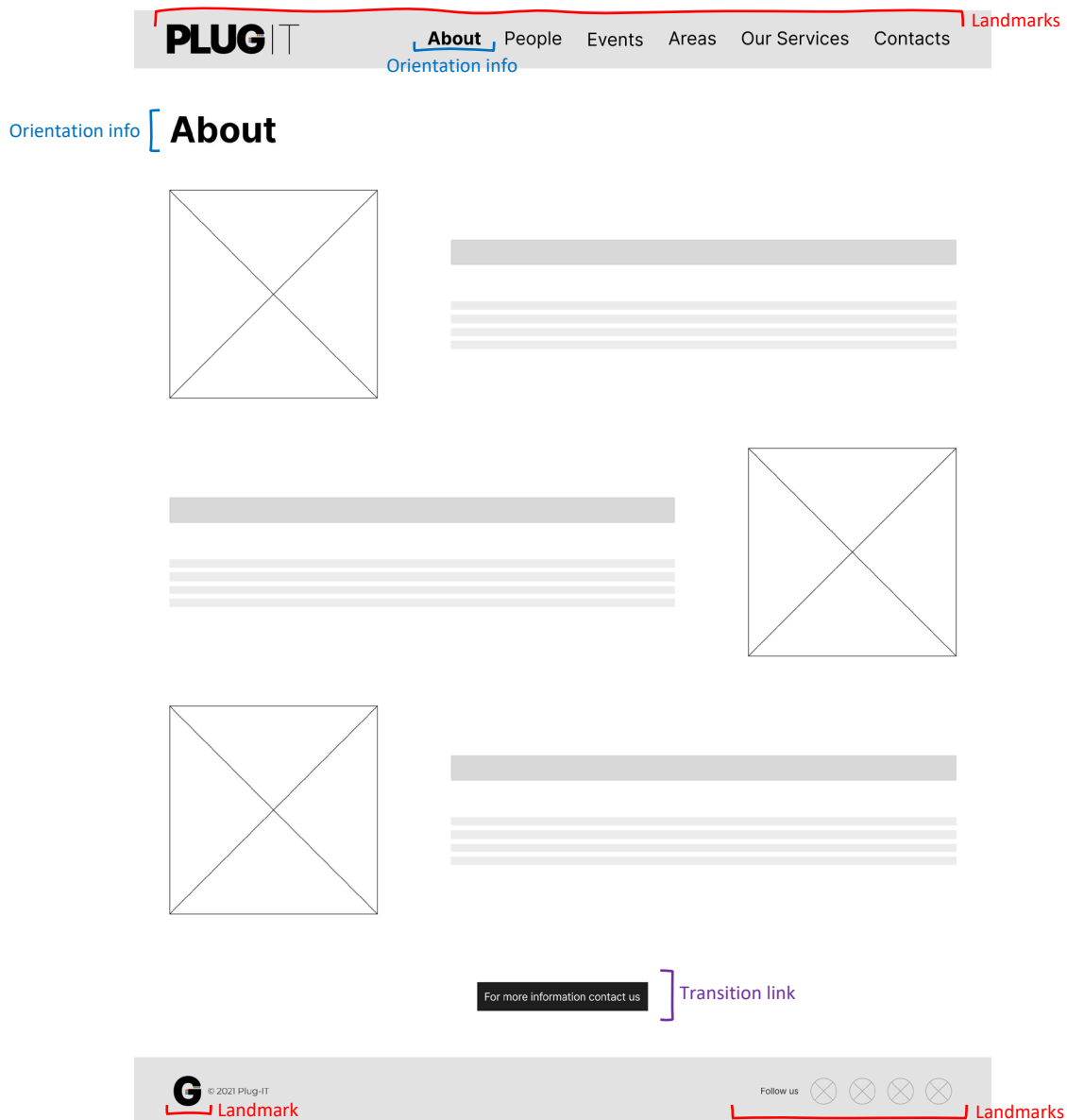
[High fidelity prototype here]

2.2.   Single Topic Pages

This section describes the design choices relating to the *single topic pages*, the places where users consume contents about a single topic.

2.2.1.   About Page

The primary purpose of the *About Page* is to inform the reader about the company and its operations. This website's section reports in less than 500 words the history of the organization and explains what the mission of *Plug-IT* is. The whole content is organized in several paragraphs.
Finally, at the bottom of the page, a *transition link* to the *Contacts* topic is provided.

Wireframe 2 – Single Topic Page: About Page

[High fidelity prototype here]

2.2.2. Contacts Page

This page dedicated to the *Contact* topic has the ultimate goal of encouraging website visitors to get in touch with the company. For this purpose, the page is composed of two blocks. At the top, there is an interactive map on which the location of the *Plug-IT* headquarter is marked. The phone number, an email contact and the full address are also provided alongside.
The lower part of the page instead consists of a form with which a customer can directly send a message to the administrative offices.

Wireframe 3 – Single Topic Page: Contacts Page

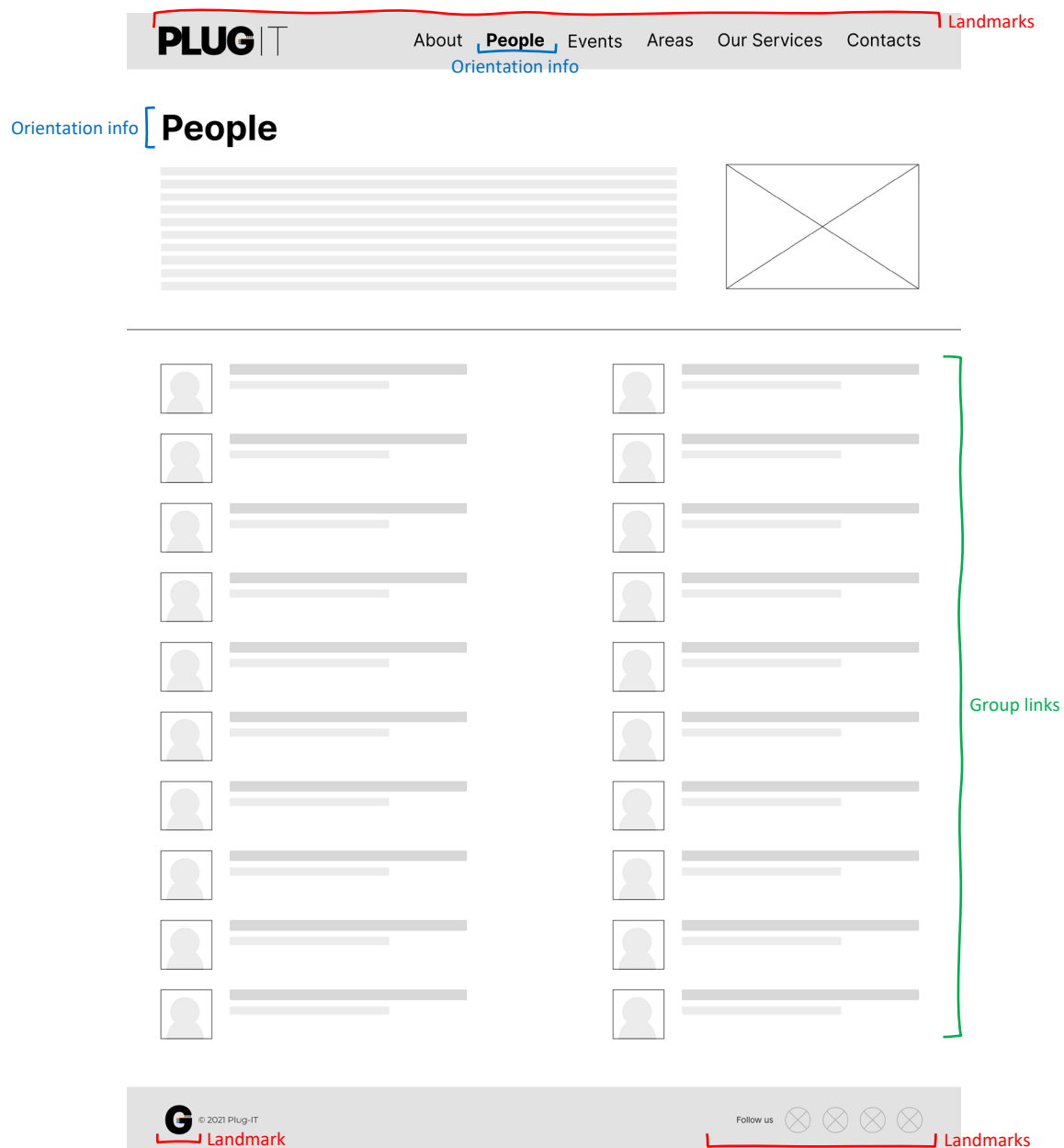[High fidelity prototype here]

2.3.   Introductory Pages

This chapter presents the design choices related to the *introductory pages*, the places where users understand what a group is about and who its members are.

2.3.1.   People Page

The *people introductory page* consists of a short text introducing the team in general. A brief description of the principles that unite its members is also provided in this section.
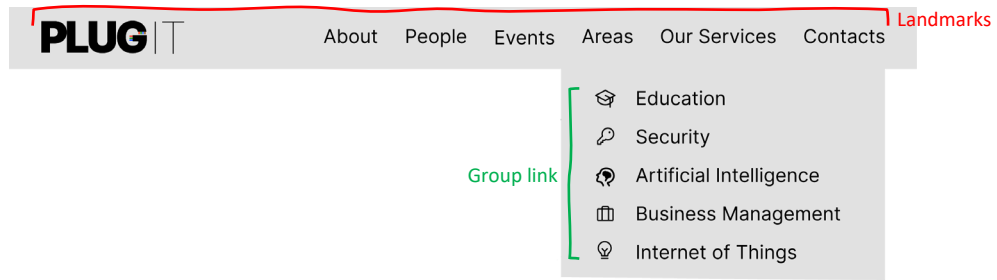The core of the page consists of a grid of *group links* to the individual employee pages. Each element of the grid includes a photo of the employee, his full name and the position he holds at *Plug-IT*. The navigation among the group members is organized according to the *index pattern*.
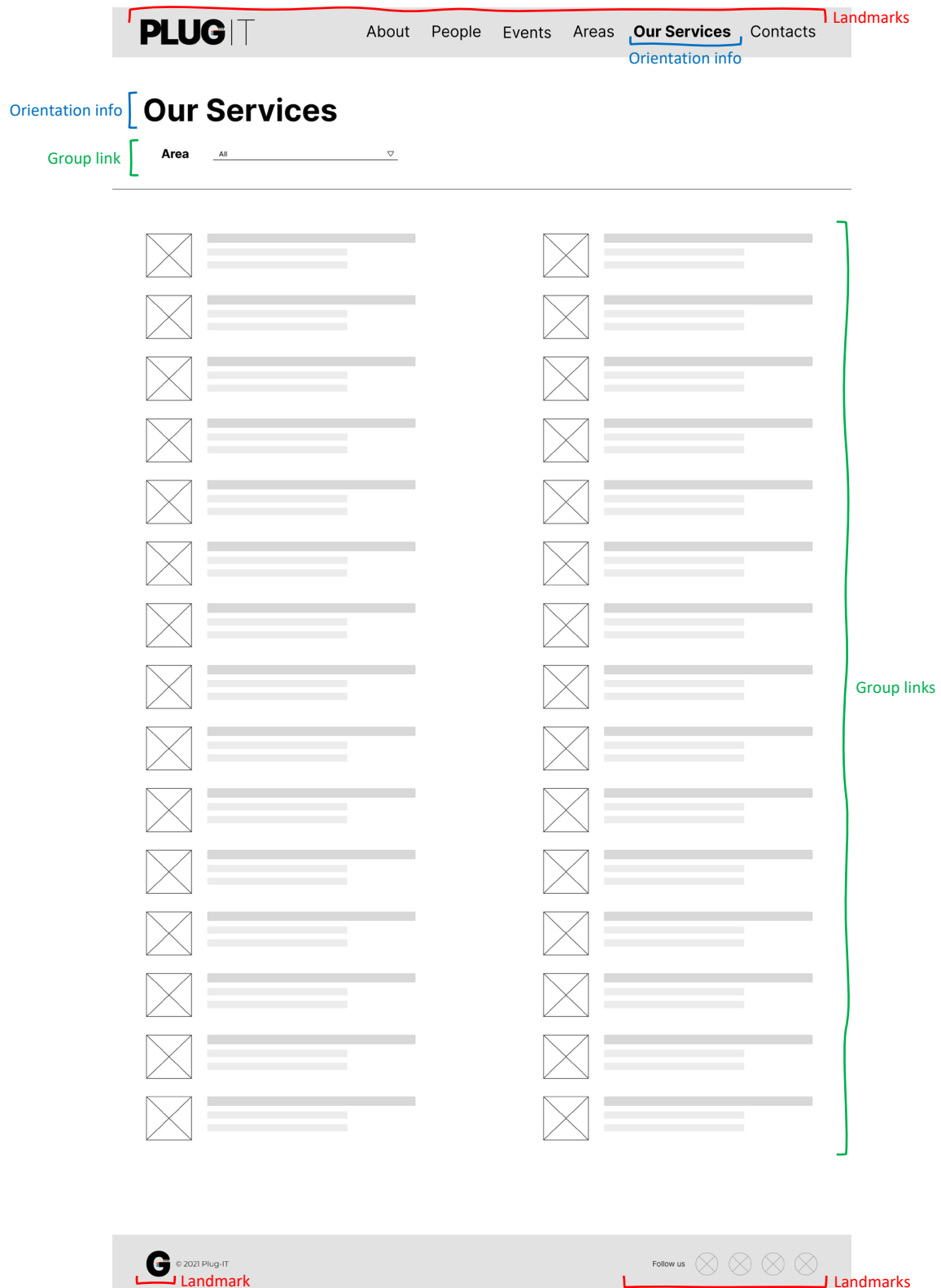

Wireframe 4 - Introductory Page: People Page

[High fidelity prototype here]

2.3.2. Areas Page

Wireframe 5 -Introductory Page: Areas Page

2.3.3. Our Services Page

Wireframe 6 - Introductory Page: Our Services Page

The *Our Services introductory page* consists of a grid of *group links* to the pages of the individual services. As previously defined in the PIDM, the navigation between them is organized according to the *index pattern*.

Each element of the grid consists of an illustrative photo, the name of the service and the area to which it belongs. In addition, there is also a very short sentence that allows customers to quickly understand what the service consists of. Finally, a dropdown menu (*group link*) allows users to filter services based on the area of interest.
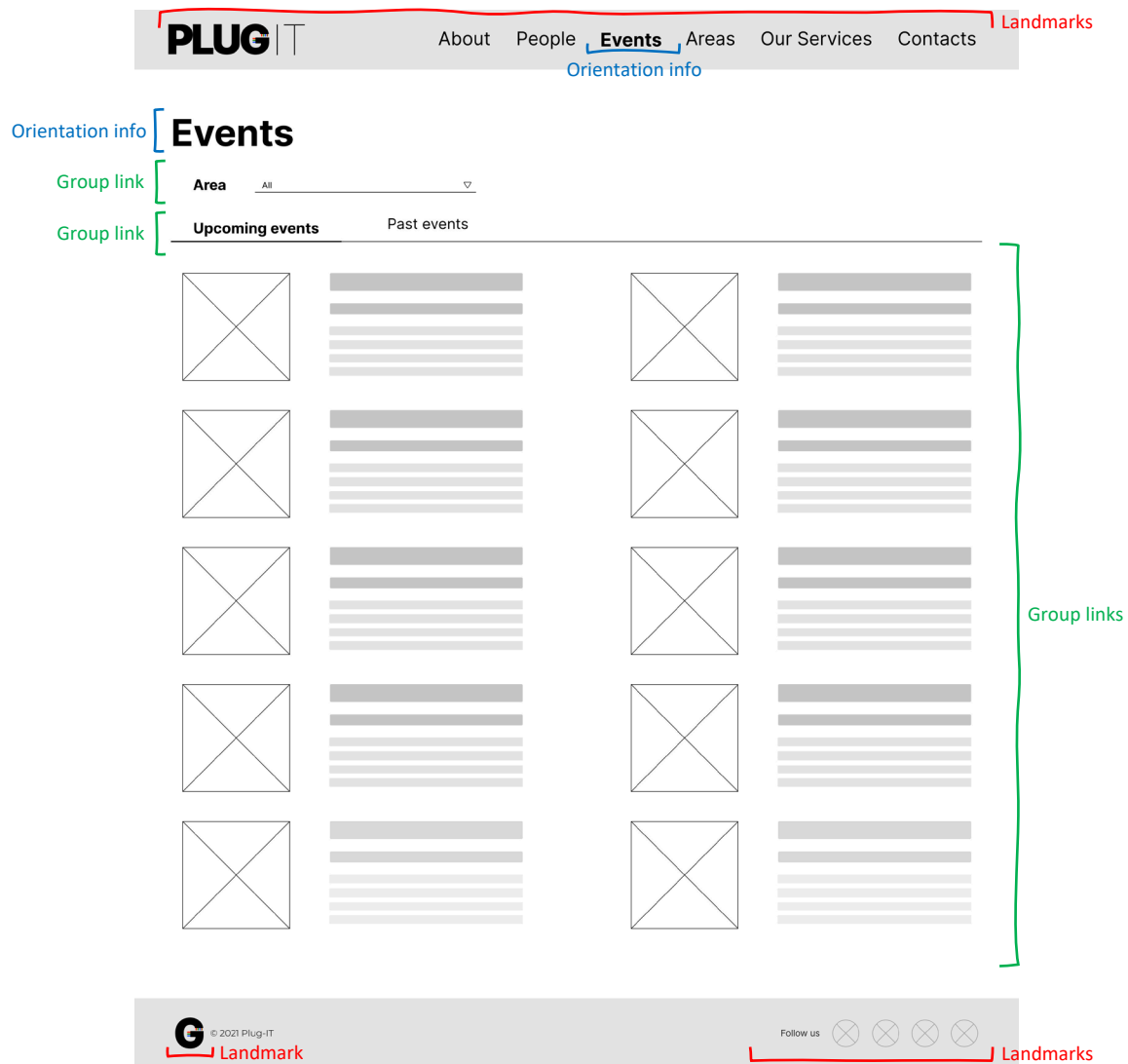
[High fidelity prototype here]

2.3.4. Events Page

The *Events introductory page* consists of a grid of *group links* to the pages of the individual events. Each element of the grid consists of an illustrative photo, the name of the event, the date on which it will be held and the area to which it belongs. In addition, there is also a brief overview that allows customers to quickly understand what it is about.

Finally, a dropdown menu (*group link*) allows users to filter events based on the area they are associated with.

In any case, the navigation between the pages of the individual events is organized according to the *index pattern*.

Wireframe 7 - Introductory Page: Events Page
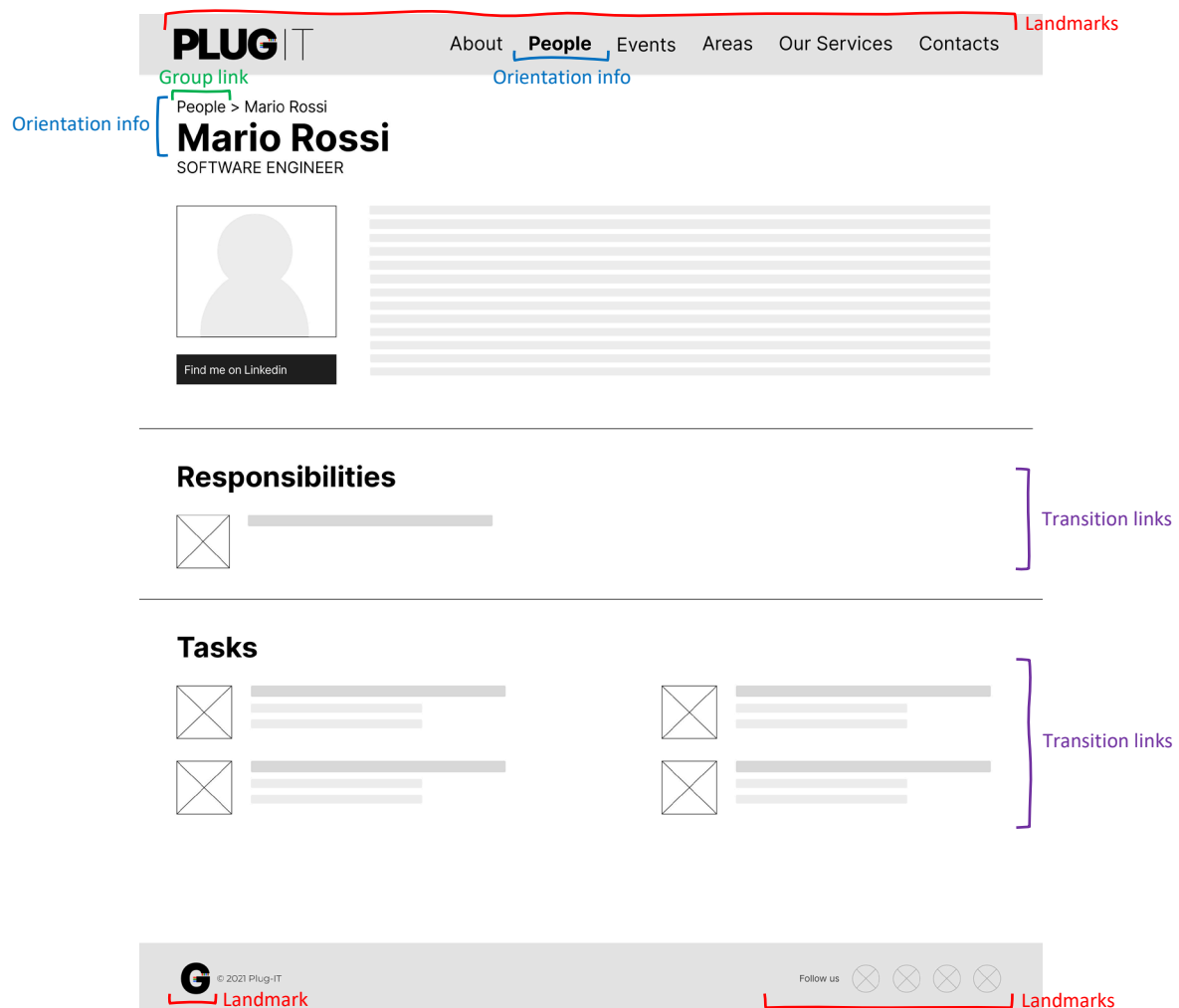
[High fidelity prototype here]

2.4. Multiple Topic Pages

This section describes the design choices relating to the *multiple topic pages*, the places where users consume contents about topics of a given kind.

2.4.1. Person Page

The *Person page* is intended to provide information relating to an individual *Plug-IT* employee.
The full name of the worker and the position held within the company are provided below the breadcrumb. At the top of the page, it is also shown a photo of the employee and his biography.
In the lower part, instead, all the activities in which the person is involved are listed. In particular, if the worker is responsible for an area, a "Responsibilities" section is shown containing a *transition link* to the related area page.
All the *transition links* to the services in which the person works are then shown in a grid view. For each of them is displayed an illustrative picture, the name of the service and its slogan. In addition, for each service, is reported the area to which it belongs. This latter element represents a *transition link* to the dedicated page.

Wireframe 8 - Multiple Topic Page: Person Page
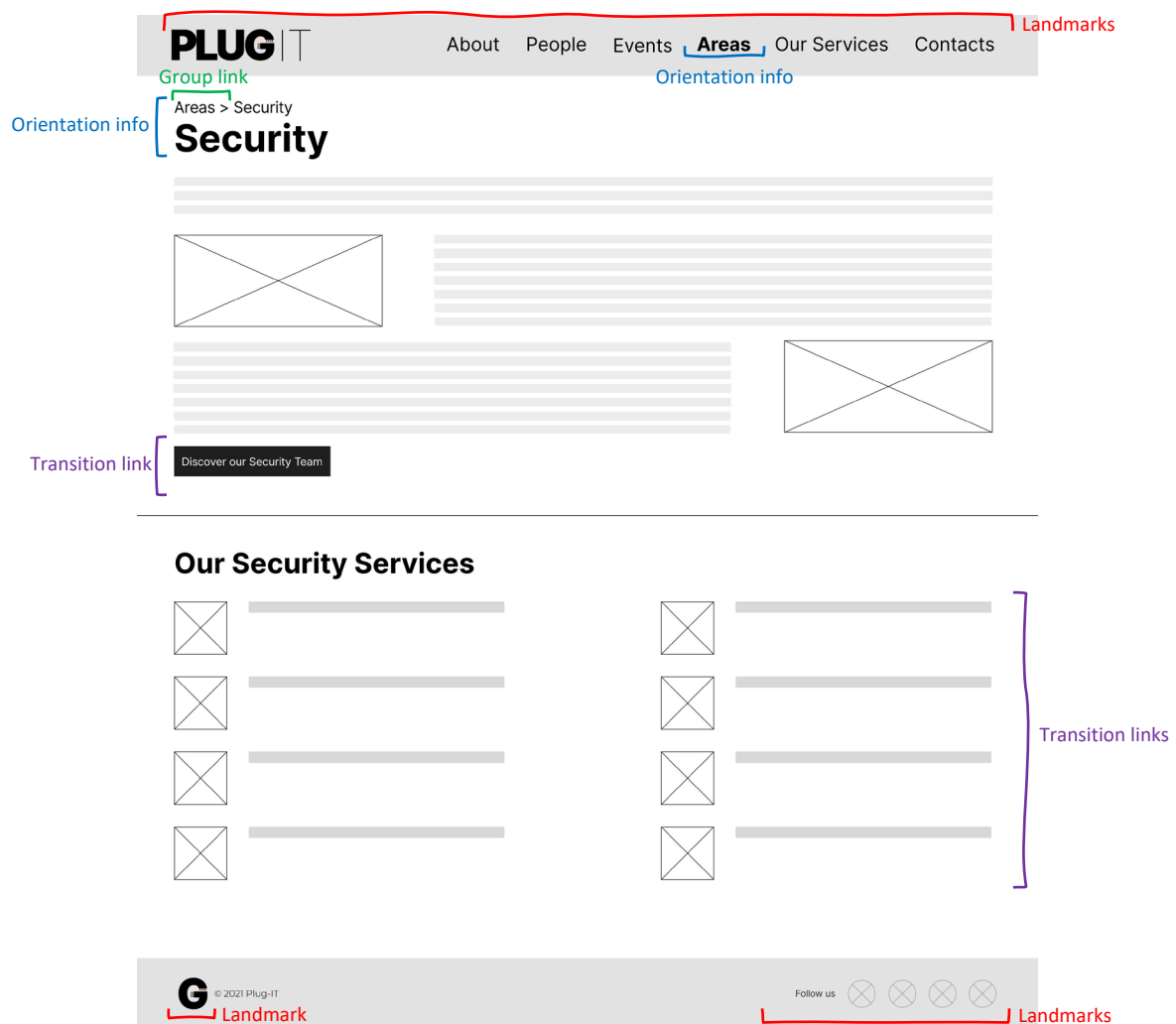
[High fidelity prototype here]

2.4.2.   Area Page

The *Area page* represents the space in which the user is informed about a specific field in which the company operates. For this page, the goal is to explain what the challenges and objectives in this sector are.

The core of the page consists of a sequence of sections in which all the details relating to the area are explained. For each paragraph, there are also some illustrative images.

Below, there is a button to reach the *transition page* relating to the team working in that specific area (*Area Team Page*).

Finally, in the lower part of the page, all the area's services offered by *Plug-IT* are listed. For each of them, an illustrative image, the name of the service and its slogan are displayed. This content is organized in a grid view of *transition links*.

Wireframe 9 - Multiple Topic Page: Area Page
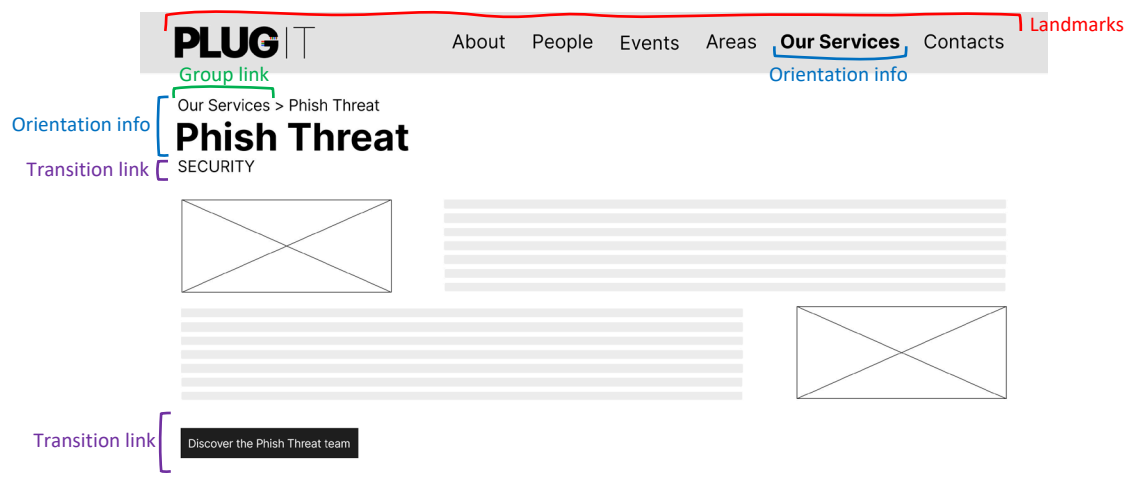
[High fidelity prototype here]

2.4.3. Service Page

The *Service page* has the ultimate goal of presenting in detail the solution offered by *Plug-IT* to deal with a problem or a need.

Below the *breadcrumb*, the service's name and a *transition link* to the related area page are shown.

The core of the page consists of a sequence of paragraphs in which all the details relating to the service and its characteristics are explained. For each paragraph, are also displayed some illustrative images.
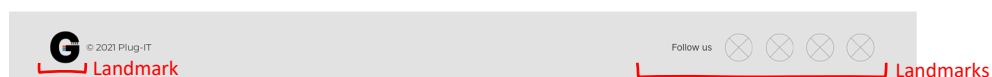
Below this section, it is shown a button to reach the *transition page* related to the team working on the service (*Service Team Page*).

Finally, at the bottom of the page, there is a form to contact the company and get even more information about the service.

Wireframe 10 - Multiple Topic Page: Service Page
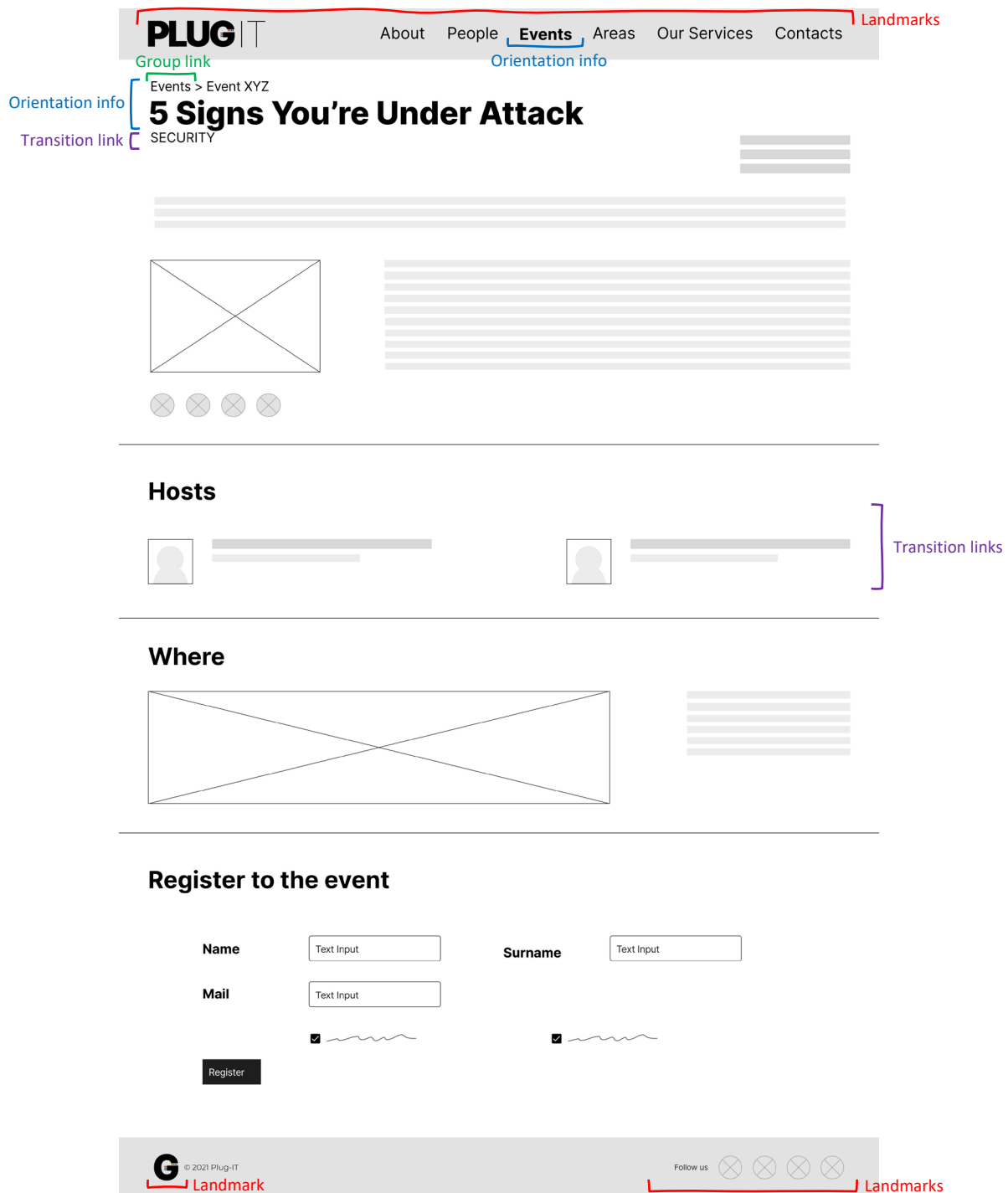
[High fidelity prototype here]

2.4.4.   Event Page

The *Event page* shows all the details related to a specific event.
Below the breadcrumb, it is shown the name of the event and a *transition link* to the page of the area to which it is associated. The start date and time are also reported at the top of the page.
Then follows a description of the event and the topics covered. Furthermore, it is displayed a set of *transition links* to the personal profiles of the hosts who will take part in the event.
Finally, the page shows an interactive map explaining where the event will be held with the full address of the location. At the bottom of the page, there is also a form to register participation in the event.

*Wireframe 11 - Multiple Topic Page: Event Page*

[High fidelity prototype here]

2.5. Transition Pages

This chapter presents the visual design choices related to the *transition pages*, the place where users see the list of topics related to a given page.

2.5.1. Area Team Page

The *Area Team transition page* displays a set of *transition links* to the personal pages of employees working in a specific area. For each person, the photo, the name and the position held in the company. The first link in the grid is the one relating to the profile of the area responsible.
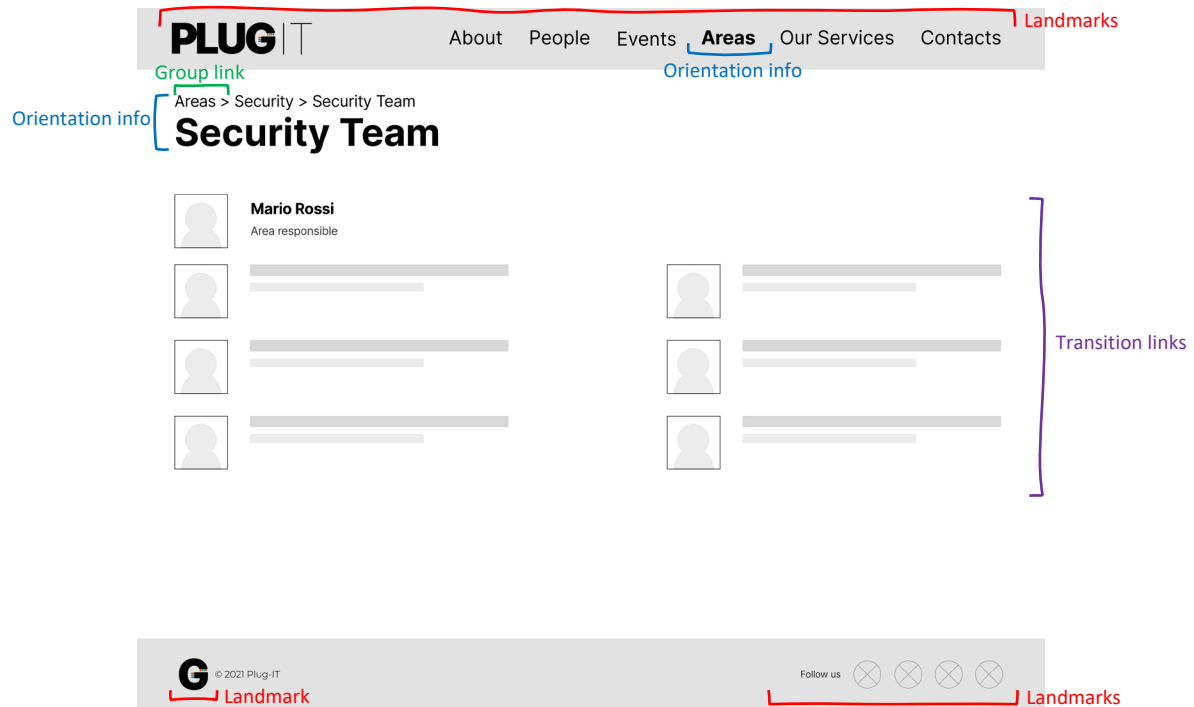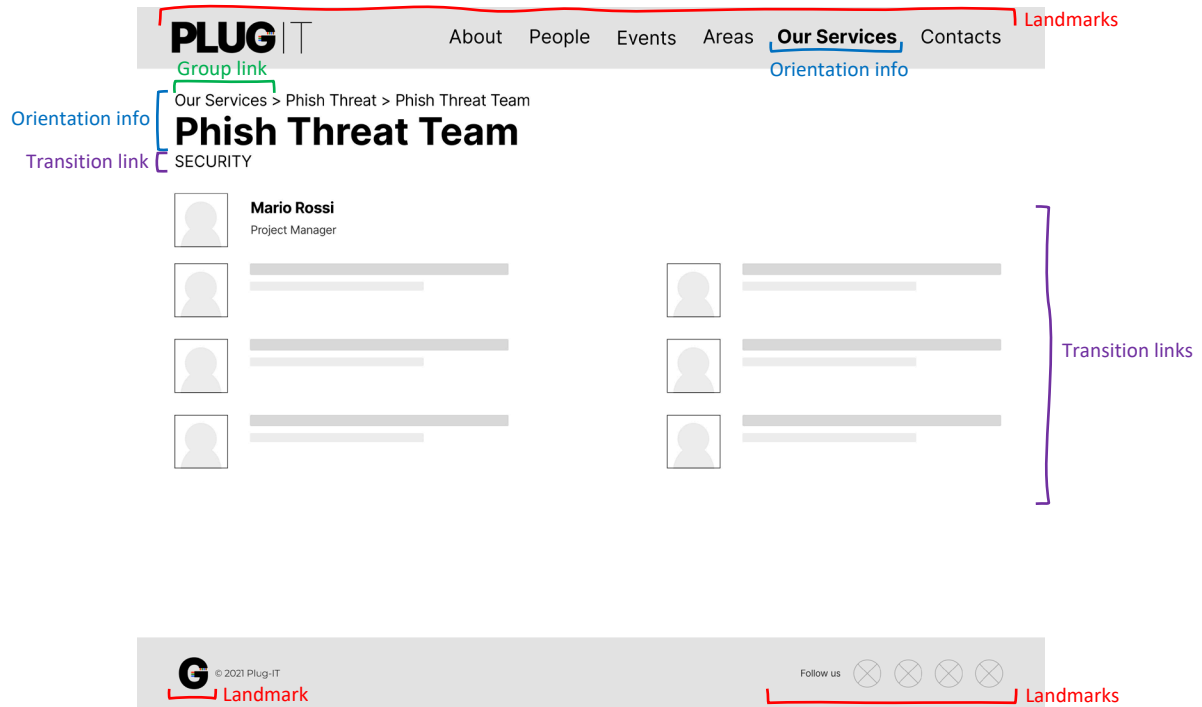

Wireframe 12 - Transition Page: Area Team Page

[High fidelity prototype here]

2.5.2. Service Team Page

The *Service Team transition page* displays a set of *transition links* to the personal pages of employees working on a specific service. For each person, the photo, the name and the role covered in the service are shown. The first link in the grid is the one relating to the profile of the project manager.

Wireframe 13 - Transition Page: Service Team Page

[High fidelity prototype here]

3. Interaction Scenarios

Use case scenarios exemplify how a typical user is going to use the application. An interaction scenario is a "story of use"; it describes a flow of user interactions across the website for users of a given profile having a specific goal. In the following, for each scenario, is presented a structured textual narrative and a graphical representation of the sequence of required actions. In each screenshot are highlighted the interactive elements activated by the user at each step.

3.1. Use Case 1

3.1.1. Textual narrative

Name	
Profile	
Goal	
Context	
Tasks	

Use Case 1: NAME HERE

3.1.2. Interaction flow

3.2. Use Case 2

3.2.1. Textual narrative

Name	
Profile	
Goal	
Context	
Tasks	

Use Case 2: NAME HERE

3.2.2. Interaction flow

3.3.   Use Case 3

3.3.1.   Textual narrative

Name	
Profile	
Goal	
Context	
Tasks	

Use Case 3: NAME HERE

3.3.2.   Interaction flow

4. Database Design

This chapter provides details of the database design for the website to be implemented. First, the conceptual model will be represented through an *ER-diagram and explained in detail*. A tabular representation of the logical model will then be provided.

4.1. Entity-Relationship Diagram

4.2. Relational Tables