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PM 401 – Fundamentals of Project Management

Andrej Piovarči, PhD.

Team Project

February 26, 2011

## Project Charter (Scope Statement)

**Project Objective**

- To build the biggest public city park in Bratislava on the left side from the Incheba building

**Deliverables**

- Build an artificial lake of 30.000 liters
- Build an underpass which connects the new park with Sad Janka Krála
- Reconstruct the building in the middle of the park
- Build pavements and a fountain
- Plant new trees, grass, and flowers
- Build playgrounds

**Milestones**

- Permits approved - March 15
- Public survey - March 17
- Retain of sponsorships - March 25
- Construction start - April 1

**Technical requirements**

- 240-volt direct current with adapters and switches 24/7
- A water pump to pump water into the artificial lake

**Limits and Exclusions**

- The beach along the Danube river will be built and financed by the T-com company; However, it will be part of the RAAP
- The cost of the water pump is not included in the project budget
- The cost of the painting tools is not included in the project budget
- The cost of the gardening equipment is not included in the project budget
- The cost of other tools and equipments which will be used to build the park is also not included in the project budget because the construction company will have their own
- The size of the artificial lake is limited to the accessibility of the water from the Danube

**Customer Review**

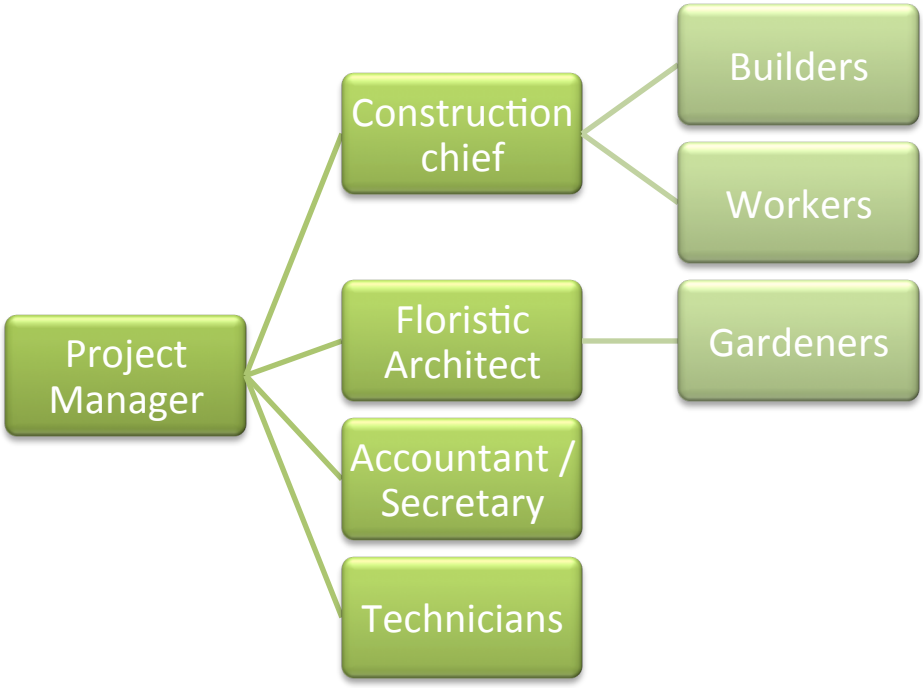
- Karolina Hudecová & Viktor Kubica

## Project Definition Statement

The St. Reika Akuna AviDiva Park (RAAP) will be a public city park located in Petržálka on the left side from Sad Janka Krála, behind the Incheba building. The park shall serve to all residents of Bratislava for recreational and other activities. The recreational activities include doing sport, such as running, jogging, inline skating, bicycling, and ice skating. Other fitness activities include yoga, dancing courses, or other exercising courses. The spare time activities include tree hugging courses, reading books, birding, boating, going to the Danube beach, or just walking and relaxing by the fountain. The park will provide 4 different playgrounds for children and their parents. Two of them will be public and the other two will be private ones. A carousel will be also located near one of the playgrounds and it will serve for anybody wanting just to spend time on a wooden horse. People will find many other entertainment activities in the park besides doing sport and spare time activities. Indeed, the park will have a concert stadium where during the year different types of events will be organized. The events could include opera, music concerts and festivals, or just outside cinema. The RAAP will be managed and maintained by the St. Reika Conservancy which will be located in a building in the center of the park which needs to be reconstructed. The park itself will be the biggest one in Bratislava and among other city parks across Slovakia. It will have different types of trees and flowers as well as many types of animals, for example squirrels. Moreover, the park will have one artificial lake which will be full of fish. The St. Reika Akuna AviDiva Park will be connected with Sad Janka Krála with an underpass which will be built under the Nový Most. There will be good bus connections to the whole city. From one side of the park, there is a bus line going through the whole Petržálka, and from the other side, the bus stop Aupark has lines to the rest of the city, including Dúbravka, and Staré Mesto.

## Work Breakdown Structure

The scheme below shows the dedicated project team structure.




The table below shows the team members positions and their tasks.

| | |
|---|---|
| **Project Manager** | Is in charge of the whole project which means he controls everybody below him in the hierarchy. He is responsible for completing the project schedule within its budget and resources. He does all the important decision which means for example, if some unexpected situation occurs, he is the one who decides what to do. |
| **Construction Chief** | He is in charge of the whole building group, builders and workers. He gives daily orders to everybody below him in the hierarchy and also reports to his chief, in this case the project manager. He must control the quality of the work, follow the work safety regulations, conduct the project on time, and control every employee below him, whether or not is he doing his work well. |
| **Builders** | Their task is to follow the instructions of their construction chief. They have to follow the work safety regulations. Their main role in the project is to build the underpass and to reconstruct the building in the middle of the park. |
| **Workers** | Their task is also to follow the instructions of their construction chief. They have to follow the work safety regulations. Their main role in the project is to build the artificial lake. |
| **Floristic Architect** | He is in charge of the gardeners. He gives daily |

| | |
|---|---|
| | orders to everybody below him in the hierarchy and also reports to his chief, in this case the project manager. He must control the quality of the work, follow the work safety regulations, conduct the project on time, and control every employee below him, whether or not is he doing his work well. |
| **Gardeners** | Their task is to follow the instructions of the floristic architect. They have to follow the work safety regulations. Their main role in the project is to dissect trees, plant new ones, plant the artificial grass, and flowers. |
| **Accountant / Secretary** | His/her task is to properly account any accounting event. He/she must also conduct the administration work, which includes ordering new materials, or arranging meetings. |
| **Technicians** | They have to install safety cameras and 158 call boxes. |

## Network / Gantt Chart with Critical Path Definition

Before starting the project, there are some important decisions that have to be made. The table below shows the planning stage.

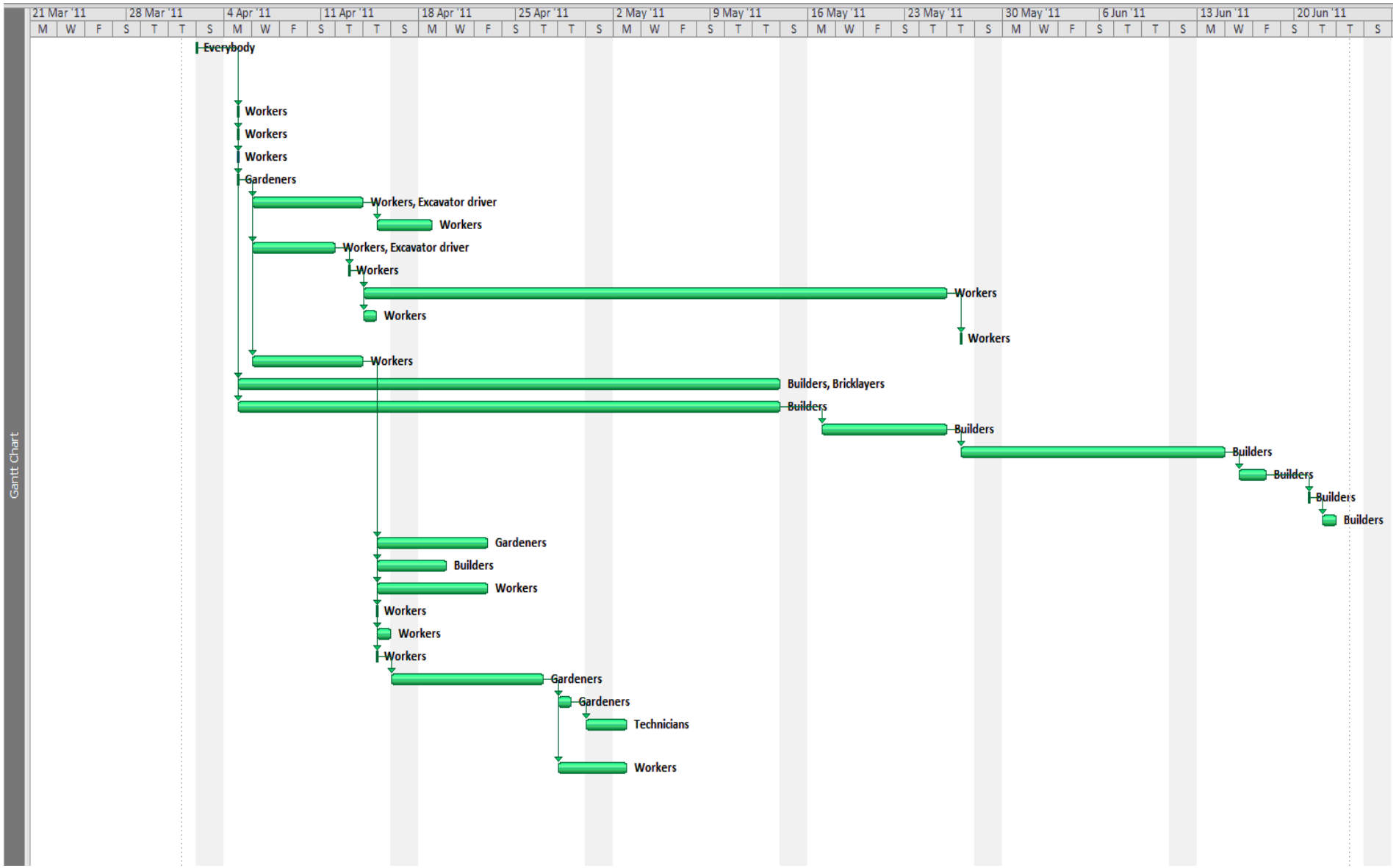
| Steps | Tasks | Decision | Appendix |
|---|---|---|---|
| **Step 1** | **Identifying the land** | Pečniansky les has a better accessibility from every part of the city and a better construction site. | 1 |
| **Step 2** | **Civic Support** | The park will need support from the neighborhood residents (Dvory V, Dvory VI), general Bratislava residents, environmental groups, business owners (Incheba), fundraising and lobbying corporations, and public officials, including the mayor of Bratislava (Milan Ftáčnik), the mayor of Petržálka (Vladimír Bajan), and the chief of police (Jaroslav Spišiak). | |
| **Step 3** | **Financing** | The park can raise money from the Slovak government (Ministry of Culture and Ministry of Environment), EU funds, and income from naming rights, future park activities, and commercial financing. The park will also have its own non-profit organization which will raise money from donations. | |
| **Step 4** | **Recreation vs. Nature** | Because the Pečniansky les has a large expanse, the park will serve both for recreation and nature conservation. | 2 |
| **Step 5** | **Pedestrians vs. cars** | The RAAP will be a car-free park, there will be no roads inside. Only pedestrians will be allowed in, or people with bicycles, roller | |

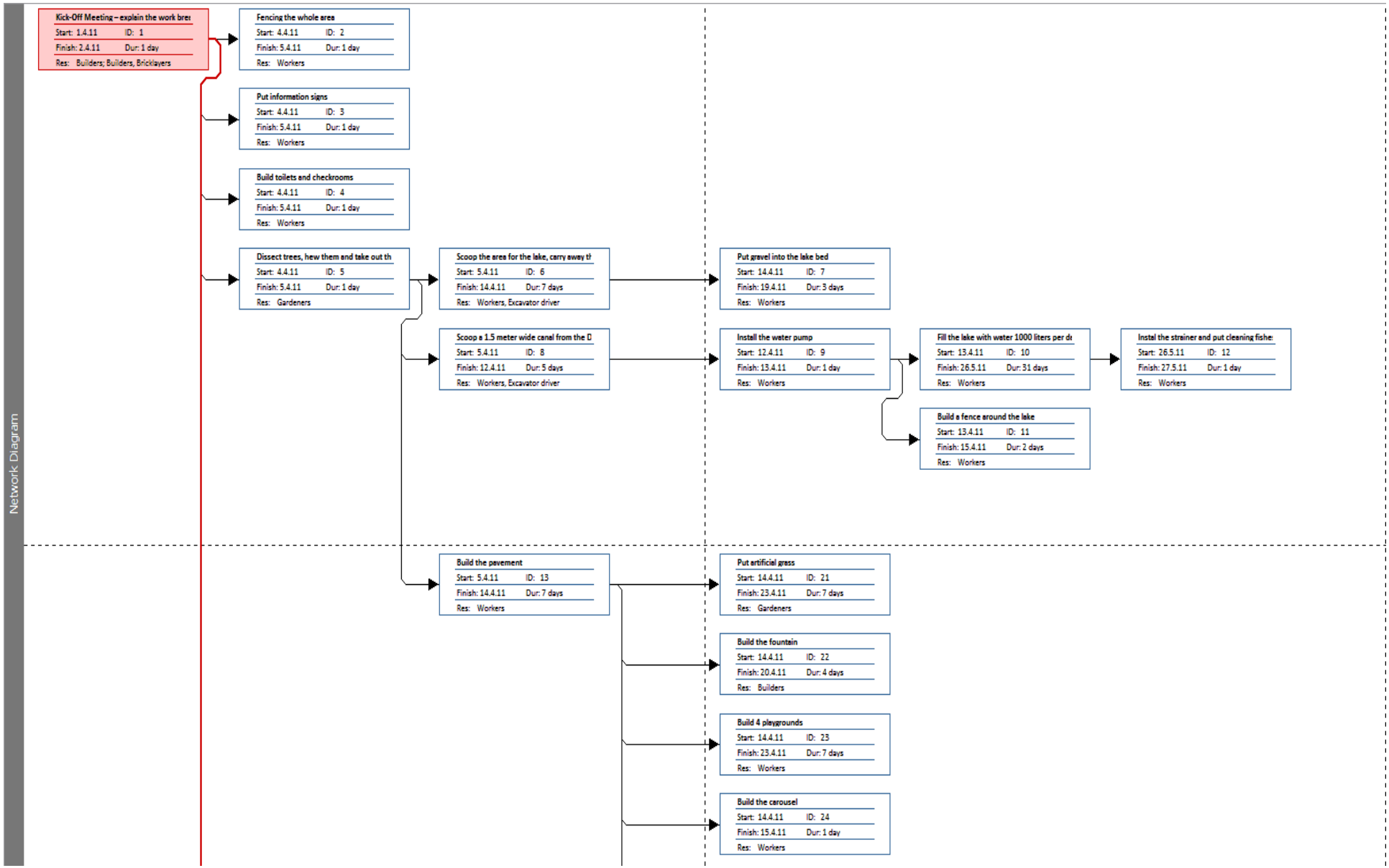
| | | | |
|---|---|---|---|
| | | skaters, or skateboards. | |
| **Step 6** | **Dogs** | The park allows dogs inside the park but it enforces leash laws. | |
| **Step 7** | **Activities Structures** | The park will have structures that shall serve mostly to Bratislava residents, starting from children and their parents (playgrounds, carousel), to young people (skateboards, stadium), and to adult people in general (fountain, running lines). | 3 |
| **Step 8** | **Food & Concessions** | The park will offer food carts (hot dogs, and other food, ice-cream, beverages). | |
| **Step 9** | **Bathrooms** | The park will offer private restrooms which will be maintained by the owner. | |
| **Step 10** | **Crime control** | The park management will work closely with the Bratislava police department requiring police officers to control the park because it is a public area. The park will also have enhanced lightening and security cameras in strategic places as well as a 158 call boxes. | 4 |

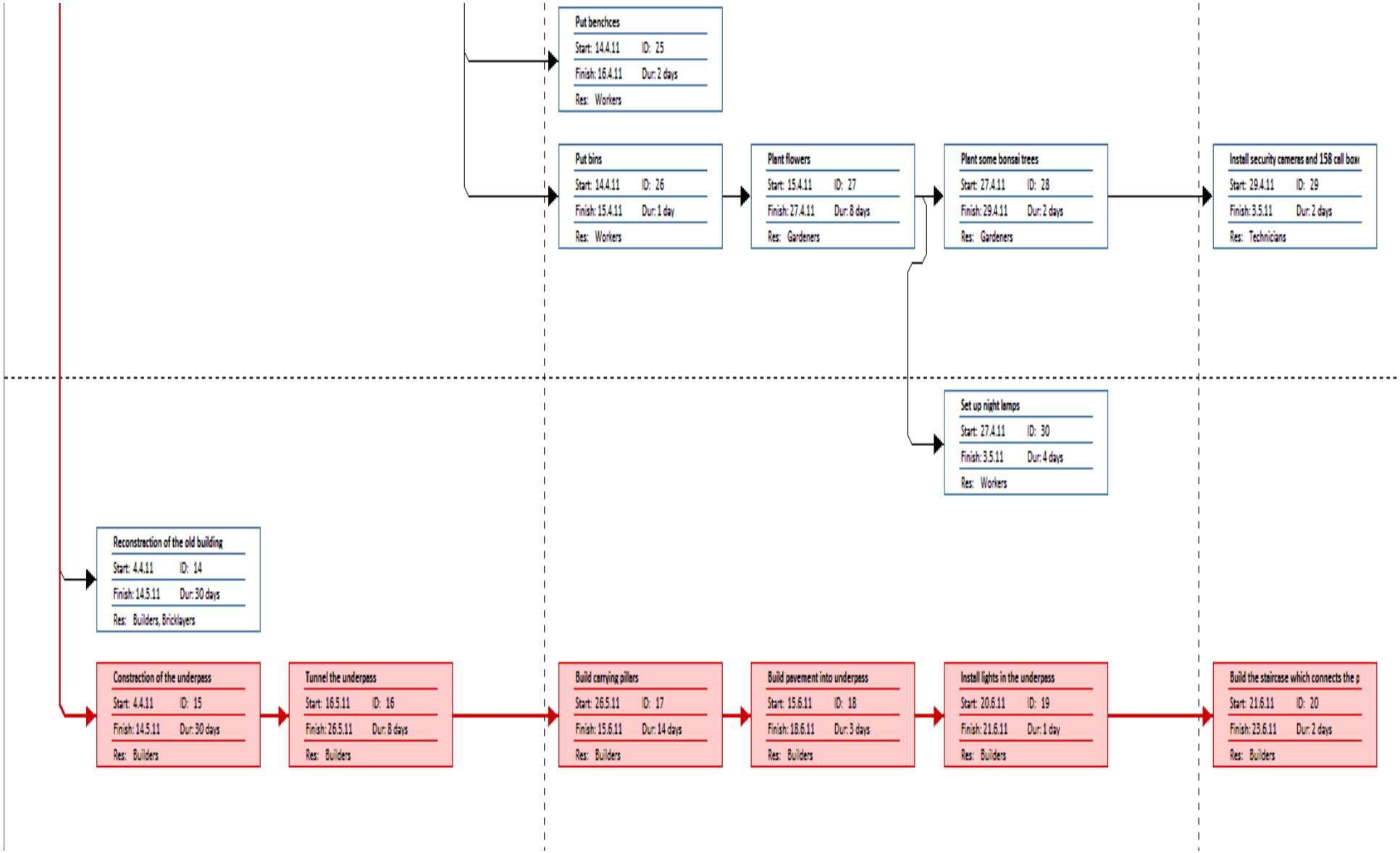
The first chart below is the tasks sheet where every single task of the process of building the park is identified. The next picture is the Gantt chart which puts the duration on each task on the timeline. The following three pictures are the network diagrams. The red rectangles are the critical path of the project.

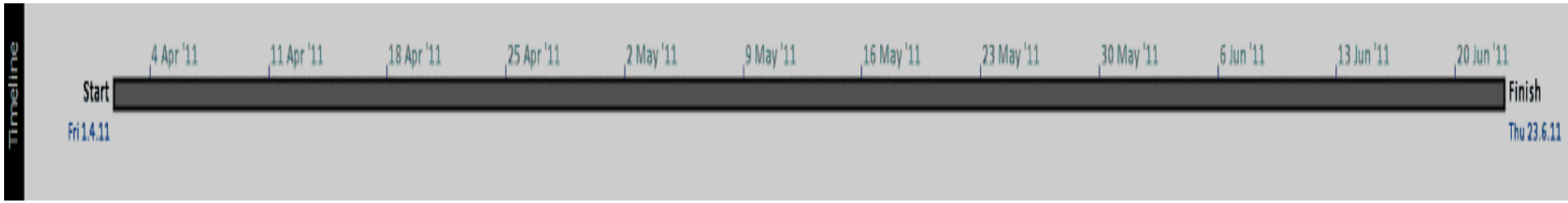
Task Sheet

| | Task | Task Name | Duration | Start | Finish | Predecessors | Resource Names |
|---|---|---|---|---|---|---|---|
| 1 | | Kick-Off Meeting – explain the work breakdown structure | 1 day | Fri 1.4.11 | Sat 2.4.11 | | Everybody |
| 2 | | Fencing the whole area | 1 day | Mon 4.4.11 | Tue 5.4.11 | 1 | Workers |
| 3 | | Put information signs | 1 day | Mon 4.4.11 | Tue 5.4.11 | 1 | Workers |
| 4 | | Build toilets and checkrooms | 1 day | Mon 4.4.11 | Tue 5.4.11 | 1 | Workers |
| 5 | | Dissect trees, hew them and take out the roots | 1 day | Mon 4.4.11 | Tue 5.4.11 | 1 | Gardeners |
| 6 | | Scoop the area for the lake, carry away the soil | 7 days | Tue 5.4.11 | Thu 14.4.11 | 5 | Workers, Excavator driver |
| 7 | | Put gravel into the lake bed | 3 days | Thu 14.4.11 | Tue 19.4.11 | 6 | Workers |
| 8 | | Scoop a 1.5 meter wide canal from the Danube into the lake | 5 days | Tue 5.4.11 | Tue 12.4.11 | 5 | Workers, Excavator driver |
| 9 | | Install the water pump | 1 day | Tue 12.4.11 | Wed 13.4.11 | 8 | Workers |
| 10 | | Fill the lake with water 1000 liters per day | 31 days | Wed 13.4.11 | Thu 26.5.11 | 9 | Workers |
| 11 | | Build a fence around the lake | 2 days | Wed 13.4.11 | Fri 15.4.11 | 9 | Workers |
| 12 | | Instal the strainer and put cleaning fishes into the water | 1 day | Thu 26.5.11 | Fri 27.5.11 | 10 | Workers |
| 13 | | Build the pavement | 7 days | Tue 5.4.11 | Thu 14.4.11 | 5 | Workers |
| 14 | | Reconstraction of the old building | 30 days | Mon 4.4.11 | Sat 14.5.11 | 1 | Builders, Bricklayers |
| 15 | | Constraction of the underpass | 30 days | Mon 4.4.11 | Sat 14.5.11 | 1 | Builders |
| 16 | | Tunnel the underpass | 8 days | Mon 16.5.11 | Thu 26.5.11 | 15 | Builders |
| 17 | | Build carrying pillars | 14 days | Thu 26.5.11 | Wed 15.6.11 | 16 | Builders |
| 18 | | Build pavement into underpass | 3 days | Wed 15.6.11 | Sat 18.6.11 | 17 | Builders |
| 19 | | Install lights in the underpass | 1 day | Mon 20.6.11 | Tue 21.6.11 | 18 | Builders |
| 20 | | Build the staircase which connects the park with the bus stop | 2 days | Tue 21.6.11 | Thu 23.6.11 | 19 | Builders |
| 21 | | Put artificial grass | 7 days | Thu 14.4.11 | Sat 23.4.11 | 13 | Gardeners |
| 22 | | Build the fountain | 4 days | Thu 14.4.11 | Wed 20.4.11 | 13 | Builders |
| 23 | | Build 4 playgrounds | 7 days | Thu 14.4.11 | Sat 23.4.11 | 13 | Workers |
| 24 | | Build the carousel | 1 day | Thu 14.4.11 | Fri 15.4.11 | 13 | Workers |
| 25 | | Put benchces | 2 days | Thu 14.4.11 | Sat 16.4.11 | 13 | Workers |
| 26 | | Put bins | 1 day | Thu 14.4.11 | Fri 15.4.11 | 13 | Workers |
| 27 | | Plant flowers | 8 days | Fri 15.4.11 | Wed 27.4.11 | 26 | Gardeners |
| 28 | | Plant some bonsai trees | 2 days | Wed 27.4.11 | Fri 29.4.11 | 27 | Gardeners |
| 29 | | Install security cameras and 158 call boxes | 2 days | Fri 29.4.11 | Tue 3.5.11 | 28 | Technicians |
| 30 | | Set up night lamps | 4 days | Wed 27.4.11 | Tue 3.5.11 | 27 | Workers |


Gantt Chart
21 Mar '11
28 Mar '11
4 Apr '11
11 Apr '11
18 Apr '11
25 Apr '11
2 May '11
9 May '11
16 May '11
23 May '11
30 May '11
6 Jun '11
13 Jun '11
20 Jun '11
Everybody
Workers
Workers
Workers
Gardeners
Workers, Excavator driver
Workers
Workers, Excavator driver
Workers
Workers
Workers
Workers
Workers
Builders, Bricklayers
Builders
Builders
Builders
Builders
Builders
Gardeners
Builders
Workers
Workers
Workers
Workers
Gardeners
Gardeners
Technicians
Workers


Network Diagram
Kick-Off Meeting – explain the work brea
Start: 1.4.11 ID: 1
Finish: 2.4.11 Dur: 1 day
Res: Builders; Builders, Bricklayers
Fencing the whole area
Start: 4.4.11 ID: 2
Finish: 5.4.11 Dur: 1 day
Res: Workers
Put information signs
Start: 4.4.11 ID: 3
Finish: 5.4.11 Dur: 1 day
Res: Workers
Build toilets and checkrooms
Start: 4.4.11 ID: 4
Finish: 5.4.11 Dur: 1 day
Res: Workers
Dissect trees, hew them and take out th
Start: 4.4.11 ID: 5
Finish: 5.4.11 Dur: 1 day
Res: Gardeners
Scoop the area for the lake, carry away th
Start: 5.4.11 ID: 6
Finish: 14.4.11 Dur: 7 days
Res: Workers, Excavator driver
Scoop a 1.5 meter wide canal from the D
Start: 5.4.11 ID: 8
Finish: 12.4.11 Dur: 5 days
Res: Workers, Excavator driver
Put gravel into the lake bed
Start: 14.4.11 ID: 7
Finish: 19.4.11 Dur: 3 days
Res: Workers
Install the water pump
Start: 12.4.11 ID: 9
Finish: 13.4.11 Dur: 1 day
Res: Workers
Fill the lake with water 1000 liters per da
Start: 13.4.11 ID: 10
Finish: 26.5.11 Dur: 31 days
Res: Workers
Instal the strainer and put cleaning fishe
Start: 26.5.11 ID: 12
Finish: 27.5.11 Dur: 1 day
Res: Workers
Build a fence around the lake
Start: 13.4.11 ID: 11
Finish: 15.4.11 Dur: 2 days
Res: Workers
Build the pavement
Start: 5.4.11 ID: 13
Finish: 14.4.11 Dur: 7 days
Res: Workers
Put artificial grass
Start: 14.4.11 ID: 21
Finish: 23.4.11 Dur: 7 days
Res: Gardeners
Build the fountain
Start: 14.4.11 ID: 22
Finish: 20.4.11 Dur: 4 days
Res: Builders
Build 4 playgrounds
Start: 14.4.11 ID: 23
Finish: 23.4.11 Dur: 7 days
Res: Workers
Build the carousel
Start: 14.4.11 ID: 24
Finish: 15.4.11 Dur: 1 day
Res: Workers


Put benchces
Start: 14.4.11 ID: 25
Finish: 16.4.11 Dur: 2 days
Res: Workers
Put bins
Start: 14.4.11 ID: 26
Finish: 15.4.11 Dur: 1 day
Res: Workers
Plant flowers
Start: 15.4.11 ID: 27
Finish: 27.4.11 Dur: 8 days
Res: Gardeners
Plant some bonsai trees
Start: 27.4.11 ID: 28
Finish: 29.4.11 Dur: 2 days
Res: Gardeners
Install security cameres and 158 call boxi
Start: 29.4.11 ID: 29
Finish: 3.5.11 Dur: 2 days
Res: Technicians
Set up night lamps
Start: 27.4.11 ID: 30
Finish: 3.5.11 Dur: 4 days
Res: Workers
Reconstraction of the old building
Start: 4.4.11 ID: 14
Finish: 14.5.11 Dur: 30 days
Res: Builders, Bricklayers
Constraction of the underpass
Start: 4.4.11 ID: 15
Finish: 14.5.11 Dur: 30 days
Res: Builders
Tunnel the underpass
Start: 16.5.11 ID: 16
Finish: 26.5.11 Dur: 8 days
Res: Builders
Build carrying pillars
Start: 26.5.11 ID: 17
Finish: 15.6.11 Dur: 14 days
Res: Builders
Build pavement into underpass
Start: 15.6.11 ID: 18
Finish: 18.6.11 Dur: 3 days
Res: Builders
Install lights in the underpass
Start: 20.6.11 ID: 19
Finish: 21.6.11 Dur: 1 day
Res: Builders
Build the staircase which connects the p
Start: 21.6.11 ID: 20
Finish: 23.6.11 Dur: 2 days
Res: Builders


Timeline
4 Apr '11
11 Apr '11
18 Apr '11
25 Apr '11
2 May '11
9 May '11
16 May '11
23 May '11
30 May '11
6 Jun '11
13 Jun '11
20 Jun '11
Start
Finish
Fri 1.4.11
Thu 23.6.11

## Schedule with Resource Allocation

The next tables show the duration of the project, the schedules with resources.

| ID | Task Mode | Task Name | Duration | Start | Finish | % Comp. | Cost | Work |
|---|---|---|---|---|---|---|---|---|
| 1 | Auto Schedu | Kick-Off Meeting – explain the w | 1 day | Fri 1.4.11 | Sat 2.4.11 | 0% | 552,00 € | 56 hrs |
| 2 | Auto Schedu | Fencing the whole area | 1 day | Mon 4.4.11 | Tue 5.4.11 | 0% | 56,00 € | 8 hrs |
| 3 | Auto Schedu | Put information signs | 1 day | Mon 4.4.11 | Tue 5.4.11 | 0% | 56,00 € | 8 hrs |
| 4 | Auto Schedu | Build toilets and checkrooms | 1 day | Mon 4.4.11 | Tue 5.4.11 | 0% | 56,00 € | 8 hrs |
| 5 | Auto Schedu | Dissect trees, hew them and tak | 1 day | Mon 4.4.11 | Tue 5.4.11 | 0% | 56,00 € | 8 hrs |
| 6 | Auto Schedu | Scoop the area for the lake, carry | 7 days | Tue 5.4.11 | Thu 14.4.11 | 0% | 1 400,00 € | 56 hrs |
| 7 | Auto Schedu | Put gravel into the lake bed | 3 days | Thu 14.4.11 | Tue 19.4.11 | 0% | 168,00 € | 24 hrs |
| 8 | Auto Schedu | Scoop a 1.5 meter wide canal frc | 5 days | Tue 5.4.11 | Tue 12.4.11 | 0% | 1 000,00 € | 40 hrs |
| 9 | Auto Schedu | Install the water pump | 1 day | Tue 12.4.11 | Wed 13.4.11 | 0% | 56,00 € | 8 hrs |
| 10 | Auto Schedu | Fill the lake with water 1000 liter | 31 days | Wed 13.4.11 | Thu 26.5.11 | 0% | 1 736,00 € | 248 hrs |
| 11 | Auto Schedu | Build a fence around the lake | 2 days | Wed 13.4.11 | Fri 15.4.11 | 0% | 112,00 € | 16 hrs |
| 12 | Auto Schedu | Instal the strainer and put cleani | 1 day | Thu 26.5.11 | Fri 27.5.11 | 0% | 56,00 € | 8 hrs |
| 13 | Auto Schedu | Build the pavement | 7 days | Tue 5.4.11 | Thu 14.4.11 | 0% | 392,00 € | 56 hrs |
| 14 | Auto Schedu | Reconstraction of the old buildir | 30 days | Mon 4.4.11 | Sat 14.5.11 | 0% | 1 920,00 € | 240 hrs |
| 15 | Auto Schedu | Constraction of the underpass | 30 days | Mon 4.4.11 | Sat 14.5.11 | 0% | 1 680,00 € | 240 hrs |
| 16 | Auto Schedu | Tunnel the underpass | 8 days | Mon 16.5.11 | Thu 26.5.11 | 0% | 448,00 € | 64 hrs |
| 17 | Auto Schedu | Build carrying pillars | 14 days | Thu 26.5.11 | Wed 15.6.11 | 0% | 784,00 € | 112 hrs |
| 18 | Auto Schedu | Build pavement into underpass | 3 days | Wed 15.6.11 | Sat 18.6.11 | 0% | 168,00 € | 24 hrs |
| 19 | Auto Schedu | Install lights in the underpass | 1 day | Mon 20.6.11 | Tue 21.6.11 | 0% | 56,00 € | 8 hrs |
| 20 | Auto Schedu | Build the staircase which connec | 2 days | Tue 21.6.11 | Thu 23.6.11 | 0% | 112,00 € | 16 hrs |
| 21 | Auto Schedu | Put artificial grass | 7 days | Thu 14.4.11 | Sat 23.4.11 | 0% | 392,00 € | 56 hrs |
| 22 | Auto Schedu | Build the fountain | 4 days | Thu 14.4.11 | Wed 20.4.11 | 0% | 224,00 € | 32 hrs |
| 23 | Auto Schedu | Build 4 playgrounds | 7 days | Thu 14.4.11 | Sat 23.4.11 | 0% | 392,00 € | 56 hrs |
| 24 | Auto Schedu | Build the carousel | 1 day | Thu 14.4.11 | Fri 15.4.11 | 0% | 56,00 € | 8 hrs |
| 25 | Auto Schedu | Put benchces | 2 days | Thu 14.4.11 | Sat 16.4.11 | 0% | 112,00 € | 16 hrs |
| 26 | Auto Schedu | Put bins | 1 day | Thu 14.4.11 | Fri 15.4.11 | 0% | 56,00 € | 8 hrs |
| 27 | Auto Schedu | Plant flowers | 8 days | Fri 15.4.11 | Wed 27.4.11 | 0% | 448,00 € | 64 hrs |
| 28 | Auto Schedu | Plant some bonsai trees | 2 days | Wed 27.4.11 | Fri 29.4.11 | 0% | 112,00 € | 16 hrs |
| 29 | Auto Schedu | Install security cameras and 158 | 2 days | Fri 29.4.11 | Tue 3.5.11 | 0% | 128,00 € | 16 hrs |
| 30 | Auto Schedu | Set up night lamps | 4 days | Wed 27.4.11 | Tue 3.5.11 | 0% | 224,00 € | 32 hrs |

Resource Usage

| | | Resource Name | Work |
|---|---|---|---|
| 1 | | Everybody | 0 hrs |
| 2 | ⚠ | **Workers** | **504 hrs** |
| 3 | ⚠ | **Gardeners** | **144 hrs** |
| 4 | ⚠ | **Workers, Excavator driver** | **96 hrs** |
| 5 | | Builders, Bricklayers | 248 hrs |
| 6 | ⚠ | **Builders** | **504 hrs** |
| 7 | | Technicians | 16 hrs |

| BASE CALENDAR: Night Shift<br>Day | Hours |
|---|---|
| Monday | 23:00 - 0:00 |
| Tuesday | 0:00 - 3:00, 4:00 - 8:00, 23:00 - 0:00 |
| Wednesday | 0:00 - 3:00, 4:00 - 8:00, 23:00 - 0:00 |
| Thursday | 0:00 - 3:00, 4:00 - 8:00, 23:00 - 0:00 |
| Friday | 0:00 - 3:00, 4:00 - 8:00, 23:00 - 0:00 |
| Saturday | 0:00 - 3:00, 4:00 - 8:00 |
| Sunday | Nonworking |
| Exceptions: | None |

| ID | Indicators | Resource Name | Work |
|---|---|---|---|
| 1 | | Everybody | 0 hrs |
| 2 | | Workers | 504 hrs |

| ID | Task Name | Units | Work | Delay | Start | Finish |
|---|---|---|---|---|---|---|
| 2 | Fencing the whole area | 100% | 8 hrs | 0 days | Mon 4.4.11 | Tue 5.4.11 |
| 3 | Put information signs | 100% | 8 hrs | 0 days | Mon 4.4.11 | Tue 5.4.11 |
| 4 | Build toilets and checkrooms | 100% | 8 hrs | 0 days | Mon 4.4.11 | Tue 5.4.11 |
| 7 | Put gravel into the lake bed | 100% | 24 hrs | 0 days | Thu 14.4.11 | Tue 19.4.11 |
| 9 | Install the water pump | 100% | 8 hrs | 0 days | Tue 12.4.11 | Wed 13.4.11 |
| 10 | Fill the lake with water 1000 liters per day | 100% | 248 hrs | 0 days | Wed 13.4.11 | Thu 26.5.11 |
| 11 | Build a fence around the lake | 100% | 16 hrs | 0 days | Wed 13.4.11 | Fri 15.4.11 |
| 12 | Instal the strainer and put cleaning fishes into the water | 100% | 8 hrs | 0 days | Thu 26.5.11 | Fri 27.5.11 |
| 13 | Build the pavement | 100% | 56 hrs | 0 days | Tue 5.4.11 | Thu 14.4.11 |
| 23 | Build 4 playgrounds | 100% | 56 hrs | 0 days | Thu 14.4.11 | Sat 23.4.11 |
| 24 | Build the carousel | 100% | 8 hrs | 0 days | Thu 14.4.11 | Fri 15.4.11 |
| 25 | Put benchces | 100% | 16 hrs | 0 days | Thu 14.4.11 | Sat 16.4.11 |
| 26 | Put bins | 100% | 8 hrs | 0 days | Thu 14.4.11 | Fri 15.4.11 |
| 30 | Set up night lamps | 100% | 32 hrs | 0 days | Wed 27.4.11 | Tue 3.5.11 |

| | | | |
|---|---|---|---|
| 3 | | Gardeners | 144 hrs |

| ID | Task Name | Units | Work | Delay | Start | Finish |
|---|---|---|---|---|---|---|
| 5 | Dissect trees, hew them and take out the roots | 100% | 8 hrs | 0 days | Mon 4.4.11 | Tue 5.4.11 |
| 21 | Put artificial grass | 100% | 56 hrs | 0 days | Thu 14.4.11 | Sat 23.4.11 |
| 27 | Plant flowers | 100% | 64 hrs | 0 days | Fri 15.4.11 | Wed 27.4.11 |
| 28 | Plant some bonsai trees | 100% | 16 hrs | 0 days | Wed 27.4.11 | Fri 29.4.11 |

| | | | |
|---|---|---|---|
| 4 | | Workers, Excavator driver | 96 hrs |

| ID | Task Name | Units | Work | Delay | Start | Finish |
|---|---|---|---|---|---|---|
| 6 | Scoop the area for the lake, carry away the soil | 100% | 56 hrs | 0 days | Tue 5.4.11 | Thu 14.4.11 |
| 8 | Scoop a 1.5 meter wide canal from the Danube into the lake | 100% | 40 hrs | 0 days | Tue 5.4.11 | Tue 12.4.11 |

| | | | |
|---|---|---|---|
| 5 | | Builders, Bricklayers | 248 hrs |

| ID | Task Name | Units | Work | Delay | Start | Finish |
|---|---|---|---|---|---|---|
| 14 | Reconstraction of the old building | 100% | 240 hrs | 0 days | Mon 4.4.11 | Sat 14.5.11 |
| 1 | Kick-Off Meeting – explain the work breakdown structure | 100% | 8 hrs | 0 days | Fri 1.4.11 | Sat 2.4.11 |

| | | | |
|---|---|---|---|
| 6 | | Builders | 504 hrs |

| ID | Task Name | Units | Work | Delay | Start | Finish |
|---|---|---|---|---|---|---|
| 1 | Kick-Off Meeting – explain the work breakdown structure | 100% | 8 hrs | 0 days | Fri 1.4.11 | Sat 2.4.11 |
| 15 | Constraction of the underpass | 100% | 240 hrs | 0 days | Mon 4.4.11 | Sat 14.5.11 |
| 16 | Tunnel the underpass | 100% | 64 hrs | 0 days | Mon 16.5.11 | Thu 26.5.11 |
| 17 | Build carrying pillars | 100% | 112 hrs | 0 days | Thu 26.5.11 | Wed 15.6.11 |
| 18 | Build pavement into underpass | 100% | 24 hrs | 0 days | Wed 15.6.11 | Sat 18.6.11 |
| 19 | Install lights in the underpass | 100% | 8 hrs | 0 days | Mon 20.6.11 | Tue 21.6.11 |
| 20 | Build the staircase which connects the park with the busstop | 100% | 16 hrs | 0 days | Tue 21.6.11 | Thu 23.6.11 |
| 22 | Build the fountain | 100% | 32 hrs | 0 days | Thu 14.4.11 | Wed 20.4.11 |



| ID | Indicators | Resource Name | Work |
|---|---|---|---|
| 7 | | Technicians | 16 hrs |

| ID | Task Name | Units | Work | Delay | Start | Finish |
|---|---|---|---|---|---|---|
| 29 | Install security cameras and 158 call boxes | 100% | 16 hrs | 0 days | Fri 29.4.11 | Tue 3.5.11 |

## Project Budget

As it was mentioned before in the planning stage, the financing of the park will have different sponsors. The first potential sponsor is the Slovak Ministry of Culture and the Ministry of Environment. We believe that the state will be willing to sponsor this park because it is a returnable long-term investment. The second sponsor is the European Union funds. We believe that this project will be highly classified for the EU grants and we will receive some money from them. The third sponsor will be some companies located in Bratislava. These companies by financing our project will obtain the naming right, which means that some tree or playground for example will be named after the company. This way companies create their positive public relations. The fourth financial income will occur only after the park will be built. The private playgrounds, the food carts and others will generate money which will be used to maintain the park. The fifth and final income will consist of donations. The future website of the park will have a bank account number where anybody interested will be able to donate some amount of money.

The table below shows the expenses of all the employees during the whole process of building the park.

| ID | Task Name | Fixed Cost | Fixed Cost Accrual | Total Cost | Baseline | Variance | Actual | Remaining |
|---|---|---|---|---|---|---|---|---|
| 14 | Reconstraction of the old buildir | 0,00 € | Prorated | 1 920,00 € | 0,00 € | 1 920,00 € | 0,00 € | 1 920,00 € |
| 10 | Fill the lake with water 1000 liter | 0,00 € | Prorated | 1 736,00 € | 0,00 € | 1 736,00 € | 0,00 € | 1 736,00 € |
| 15 | Constraction of the underpass | 0,00 € | Prorated | 1 680,00 € | 0,00 € | 1 680,00 € | 0,00 € | 1 680,00 € |
| 6 | Scoop the area for the lake, carry | 0,00 € | Prorated | 1 400,00 € | 0,00 € | 1 400,00 € | 0,00 € | 1 400,00 € |
| 8 | Scoop a 1.5 meter wide canal frc | 0,00 € | Prorated | 1 000,00 € | 0,00 € | 1 000,00 € | 0,00 € | 1 000,00 € |
| 17 | Build carrying pillars | 0,00 € | Prorated | 784,00 € | 0,00 € | 784,00 € | 0,00 € | 784,00 € |
| 1 | Kick-Off Meeting – explain the w | 0,00 € | Prorated | 552,00 € | 0,00 € | 552,00 € | 0,00 € | 552,00 € |
| 16 | Tunnel the underpass | 0,00 € | Prorated | 448,00 € | 0,00 € | 448,00 € | 0,00 € | 448,00 € |
| 27 | Plant flowers | 0,00 € | Prorated | 448,00 € | 0,00 € | 448,00 € | 0,00 € | 448,00 € |
| 13 | Build the pavement | 0,00 € | Prorated | 392,00 € | 0,00 € | 392,00 € | 0,00 € | 392,00 € |
| 21 | Put artificial grass | 0,00 € | Prorated | 392,00 € | 0,00 € | 392,00 € | 0,00 € | 392,00 € |
| 23 | Build 4 playgrounds | 0,00 € | Prorated | 392,00 € | 0,00 € | 392,00 € | 0,00 € | 392,00 € |
| 22 | Build the fountain | 0,00 € | Prorated | 224,00 € | 0,00 € | 224,00 € | 0,00 € | 224,00 € |
| 30 | Set up night lamps | 0,00 € | Prorated | 224,00 € | 0,00 € | 224,00 € | 0,00 € | 224,00 € |
| 7 | Put gravel into the lake bed | 0,00 € | Prorated | 168,00 € | 0,00 € | 168,00 € | 0,00 € | 168,00 € |
| 18 | Build pavement into underpass | 0,00 € | Prorated | 168,00 € | 0,00 € | 168,00 € | 0,00 € | 168,00 € |
| 29 | Install security cameras and 158 | 0,00 € | Prorated | 128,00 € | 0,00 € | 128,00 € | 0,00 € | 128,00 € |
| 11 | Build a fence around the lake | 0,00 € | Prorated | 112,00 € | 0,00 € | 112,00 € | 0,00 € | 112,00 € |
| 20 | Build the staircase which connec | 0,00 € | Prorated | 112,00 € | 0,00 € | 112,00 € | 0,00 € | 112,00 € |
| 25 | Put benchces | 0,00 € | Prorated | 112,00 € | 0,00 € | 112,00 € | 0,00 € | 112,00 € |
| 28 | Plant some bonsai trees | 0,00 € | Prorated | 112,00 € | 0,00 € | 112,00 € | 0,00 € | 112,00 € |
| 2 | Fencing the whole area | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 3 | Put information signs | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 4 | Build toilets and checkrooms | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 5 | Dissect trees, hew them and take | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 9 | Install the water pump | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 12 | Instal the strainer and put cleani | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 19 | Install lights in the underpass | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 24 | Build the carousel | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| 26 | Put bins | 0,00 € | Prorated | 56,00 € | 0,00 € | 56,00 € | 0,00 € | 56,00 € |
| | | 0,00 € | | 13 008,00 € | 0,00 € | 13 008,00€ | 0,00 € | 13 008,00 € |

The next table below shows other expenses the park will have.

| Item | Price (in Euros) |
|---|---|
| **Carousel** | 200.000 |
| **Playgrounds** | 16.000 |
| **Artificial grass** | 35.000 |
| **Flowers** | 15.000 |
| **Trees, bonsai** | 20.000 |
| **Bins** | 5.000 |
| **Benches** | 12.000 |
| **Night lamps** | 7.000 |
| **Security cameras** | 5.000 |
| **158 call boxes** | 3.000 |
| **Raw materials** | 40.000 |
| **Water filter** | 1.000 |
| **Other expenses and reserves** | 127.992 |

So the final estimated budget for the St. Reika Akuna AviDiva Park is 500.000€.

The chart below summarizes the most important points of the project, including the cost, work, and resources.

| Dates | | | |
|---|---|---|---|
| Start: | Fri 1.4.11 | Finish: | Thu 23.6.11 |
| Baseline Start: | NA | Baseline Finish: | NA |
| Actual Start: | NA | Actual Finish: | NA |
| Start Variance: | 0 days | Finish Variance: | 0 days |

| Duration | | | |
|---|---|---|---|
| Scheduled: | 59 days | Remaining: | 59 days |
| Baseline: | 0 days | Actual: | 0 days |
| Variance: | 59 days | Percent Complete: | 0% |

| Work | | | |
|---|---|---|---|
| Scheduled: | 1 552 hrs | Remaining: | 1 552 hrs |
| Baseline: | 0 hrs | Actual: | 0 hrs |
| Variance: | 1 552 hrs | Percent Complete: | 0% |

| Costs | | | |
|---|---|---|---|
| Scheduled: | 13 008,00 € | Remaining: | 13 008,00 € |
| Baseline: | 0,00 € | Actual: | 0,00 € |
| Variance: | 13 008,00 € | | |

| Task Status | | Resource Status | |
|---|---|---|---|
| Tasks not yet started: | 30 | Work Resources: | 3 |
| Tasks in progress: | 0 | Overallocated Work Resources: | 4 |
| Tasks completed: | 0 | Material Resources: | 0 |
| Total Tasks: | 30 | Total Resources: | 7 |

## Identified Risks with Mitigation Activities

The process of building the St. Reika Akuna AviDiva Park might not be flawless. Therefore it is necessary to create a risk management process.

**Step 1: Risk Identification**

The chart below is the Risk Breakdown Structure (RBS) which identifies the potential risks that can occur during or after the project is complete.

**Technical**

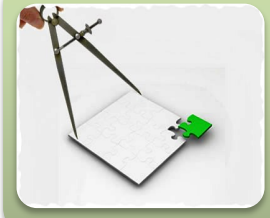
- **Requirements** - The carousal and the night lamps will need electricity 24/7; also our equipment will need to be plugged to electricity
- **Performances and reliability** - Will the security cameras work properly? Will they be damaged by hooligans?

**External**

- **Subcontractors and suppliers** - Will they be able to deliver us materials and equipment on time?
- **Regulatory** - Can we take water from the Dunaj? How much water can we take from the Dunaj to create the artificial lake?
- **Market** - Will the future market prices affect our project budget?
- **Customer** - Will the customer be satisfied with our work? Won't he complain about the dirt or other factors?
- **Weather** - During inconvenient weather changes, some works will have to be stopped. What will be done if there's a flood?
- **Environment** - Will the environment be degraded?

**Organizational**

- **Project dependencies** - Will not delivered resources cause a shortage on our project?
- **Resources** - Will the amount of resources be enough?
- **Funding** - Will all our sponsors be able to provide us the money on time?
- **Prioritizing** - If money will not be enough, will we try to find other financial resources or will we cut on expenses?



**Project management**

- **Estimating** - Will the budget change according to future market prices?
- **Controlling** - Will our controller be reliable and do his work well?
- **Communication** - Will the communication channels among all employees work properly?

**Step 2 & 3: Risk Assessment & Risk Response Development**

The table below shows the identified risks and attributes 4 categories to them. The first category is the likelihood of that risk to occur, the second is the impact that risk will have on our project, the third is the detection difficulty that risk has, or in other words how difficult it is to foresee this event to happen. These three categories are evaluated with a scale from 1 to 5, where 5 is the worst. The last category is when, which identifies the time when the risk can occur. After that the table contains the mitigation actions which are the actions that can be taken after or even before the risk occurs.

| Risk Event | Likelihood | Impact | Detection Difficulty | When | Mitigation Actions |
|---|---|---|---|---|---|
| **Technology** | 1 | 1 | 1 | Executing stage | Buy high technology |
| **Delivery of Resources** | 3 | 5 | 1 | Executing stage | Monitor the delivery process |
| **Amount of Resources** | 2 | 5 | 5 | Executing stage | Order some additional amount of resources as a reserve |
| **Stream the Danube into the lake** | 3 | 5 | 5 | Executing stage | If the water was insufficient, make the lake smaller |
| **Market prices increase** | 5 | 5 | 5 | Executing stage | Use the fair market value accounting |
| **Customers complaint** | 3 | 2 | 5 | During the whole project | Try to minimize the negative effects to the surrounding of the park |
| **Inconvenient weather** | 5 | 5 | 5 | Executing stage | If a bad weather causes shortage on the project duration time, use extra working hours during the nice weather |
| **Floods** | 4 | 5 | 5 | Executing stage | Build flood barriers along the Danube coast |
| **Retain sponsorship money** | 2 | 5 | 5 | During the whole project | Use contracts to obtain money on time |
| **Money shortage** | 2 | 5 | 4 | During the whole project | Have other potential sponsors in reserve |
| **Workers performance** | 2 | 4 | 4 | Executing stage | Build authority and motivation |
| **Communication channels** | 1 | 2 | 3 | Executing stage | Have a precise work breakdown structure and use transmitters |
| **Environmental degradation** | 2 | 3 | 1 | Executing and closing stage | Try to minimize the work products and protect the nature |

**Step 4: Risk Response Control**

Because we should we aware of the fact that during the whole project life cycle various difficulties or problems can occur, we need to include all these threats into the risk register. The risk register is the final step in our risk management. It will contain detailed identified risks, their description, and the probability of occurring, the category, the impact, responses,

and contingency plans. Having any possible risk identified and analyzed and having a solution for it will be beneficial for our project.

## Method of Controlling Scope Growth and Changes

**Step 1: Setting a Baseline Plan**

Every project manager should have the baseline plan which includes elements for measuring the performance

**Step 2: Measuring Progress and Performance**

During the project development, it is important for the project manager to measure the progress. The first category is the quantitative measure which involves time and budgets. The next category is the qualitative measures where the manager asks about the reports of the quality status of the project from his employees.

**Step 3: Comparing Plan against Actual**

Once he has all the needed information, he must compare them to the project plan. If the results, like budgets, are in accordance with the project plan, then the project has made progress. If it is not in accordance with the plan, he must take some steps to correct the shortages.

**Step 4: Taking Action**

It is good for every project manager to have a reserve plan, the so called “plan B”. If there would occur some changes in the process of building the park, he must immediately react to these changes and find solutions.

Let’s assume that during the scooping of the lake the Austrian government would not allow us to take water from the Danube. In this situation, the project manager must have a plan B. In this case, he has two choices. The first possibility would be to obtain the water from deep aquifers. Or the second choice would be to do not build the lake. After considering that taking water from deep aquifers is an extremely expensive process, he will have to build the park without the lake.

## Method of Assuring Customer Satisfaction

As any other project, the St. Reika Akuna AviDiva Park purpose will be to serve to some customers. In this case the customers will be all the residents of Bratislava. But for the park to really maintain its purpose, the customers need to be satisfied. Therefore, it is important to implement the method of assuring customers satisfaction in the project which monitors whether or not the expectations are met. The method will consist of three stages.

**Stage 1: Before the project**

During the planning stage, before the project is started, there will be a survey conducted in Bratislava. The survey will be done on a sample of 1500 people aged 18 and above. The participants will be asked simple questions like "What would you like to have in the park? Would you agree that people would bring their dogs in the park?" After that, the collected answers will be evaluated and recommendations for the project will be done. This project has already tried to foresee the possible answers and make the project based on that.

**Stage 2: During the project**

During the executing stage some customers, in this case people living in the neighborhoods of the park, might have some complaints. The complaints could be about the noise, dirt, dust, or some others. In this case we will try to approach the customers individually and try to find solutions that will work for both sides.

**Stage 3: After the project**

The most important satisfactory monitoring starts once the project is completed and the park will be opened to the residents. Here we have two methods:

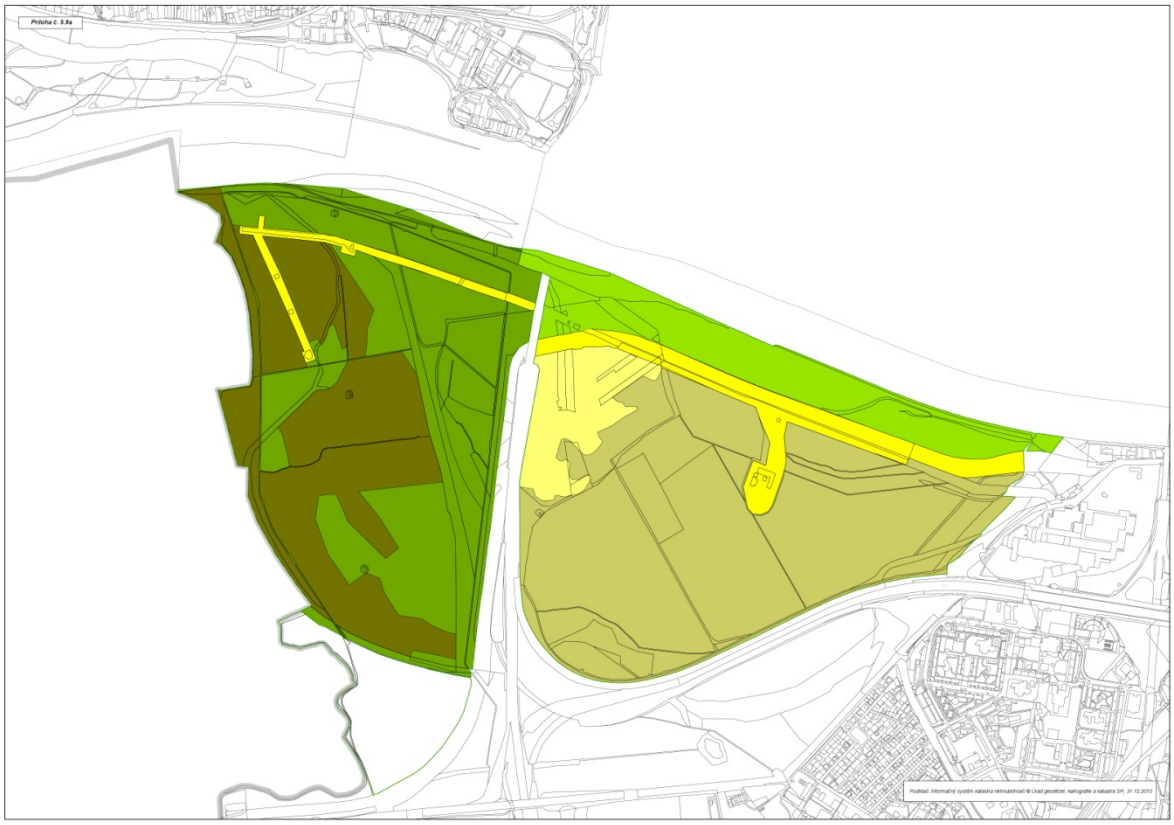
a) **Indirect method** – it consists of observing the daily attendance of the park, revenues from services the park provides.

b) **Direct method** – this consists of making two kinds of surveys. The first one will be personal surveys where we will ask the visitors what they like about the park and what would they change. The second one will be online surveys where customers will be

able to express their opinion about the park on our future website www.raap.sk. Also another type of survey which is very common today is the like button on Facebook. According to these both indirect and direct methods the park could be maintained and future development could be established.

## Appendix

1 – The picture below shows the area of the Pečniansky les where the park will be built.



2 – The picture below shows the Pečniansky les seen from the opposite coast of the Danube.

3 – The picture below shows an example of a carousel which will be built in the park.

4 – The picture below shows how the 158 call boxes will look like.