

Level Design Documentation of a fictional mission for the mobile game Emergency HQ

1. Instructions for the Level Designer

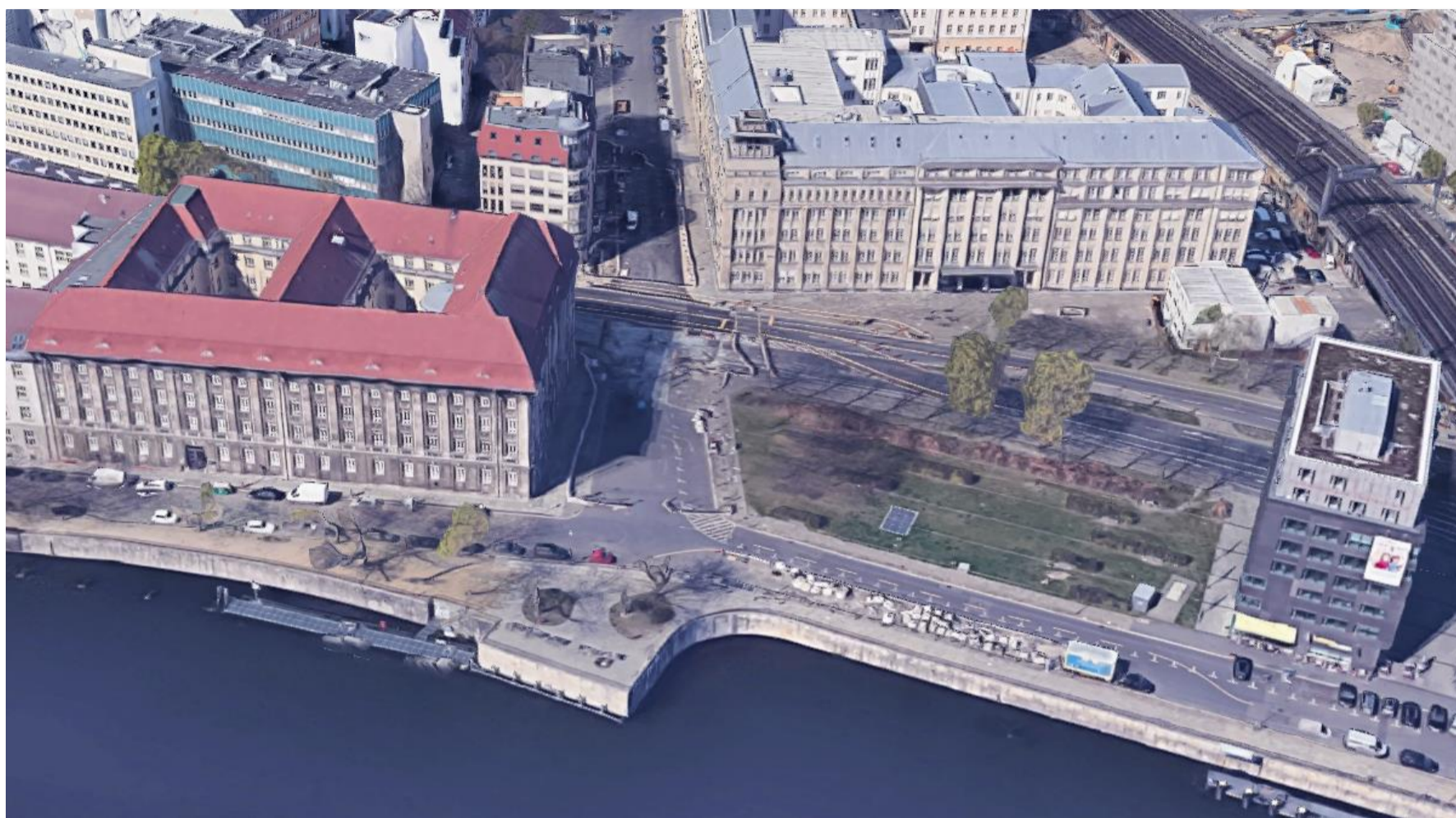


Fig.1: The mission was inspired by this screenshot from Google Maps, taken at Berlin, Rolandufer, Corner to Littenstr.

What makes the scene look like a place in Berlin city and not any other city?

Due to the peculiarities of Berlin architecture – such as the block perimeter development and the facades of Gründerzeit with a diverse backyard structure – you can see that it is Berlin. A landmark of Berlin – such as the Brandenburg Gate – was deliberately NOT chosen because such a landmark can only burn once in a mission as it is unlikely to burn a second time. The map chosen here could not only be used for the mission described here, it could also potentially be used for other missions as well (e.g. a fight on a boat). Chapter 2 also describes a building as an art asset that has the specific Berlin architecture.

Highlight of the mission and the difference to other Emergency HQ missions

The highlight is a major truck accident, in which one of the trucks falls half-way into the Spree and has to be pulled out again by crane while the other truck catches fire. Another highlight is the sightseeing ship as it is a visually stunning set piece. All of this results in a unique and memorable mission.



Fig.: 2 The mission briefing in the style of Emergency HQ

The required units are described in the next sections. Durations for bronze, silver and gold achievements are calculated in the mission schedule (Fig. 5). Call costs and rewards are a mere guess and depend of the game economy and the player progression.

Mission Briefing

English

Traffic accident involving a truck crash

A tired truck driver has crashed into another truck which caused it to get off the road. The driver's cab fell into the water, and has to be pulled out using a crane. The accident resulted in a subsequent accident with some injuries and fires.

Deutsch

Verkehrsunfall mit einem LKW-Crash

Ein übermüdeter LKW-Fahrer verursacht einen Unfall, durch den ein anderer LKW von der Straße abkommt, mit dem Fahrerhaus ins Wasser fällt und mithilfe eines Krans wieder rausgezogen werden muss. Durch den Unfall entsteht ein Folgeunfall mit einigen Verletzten.

Sketch of the Mission Area

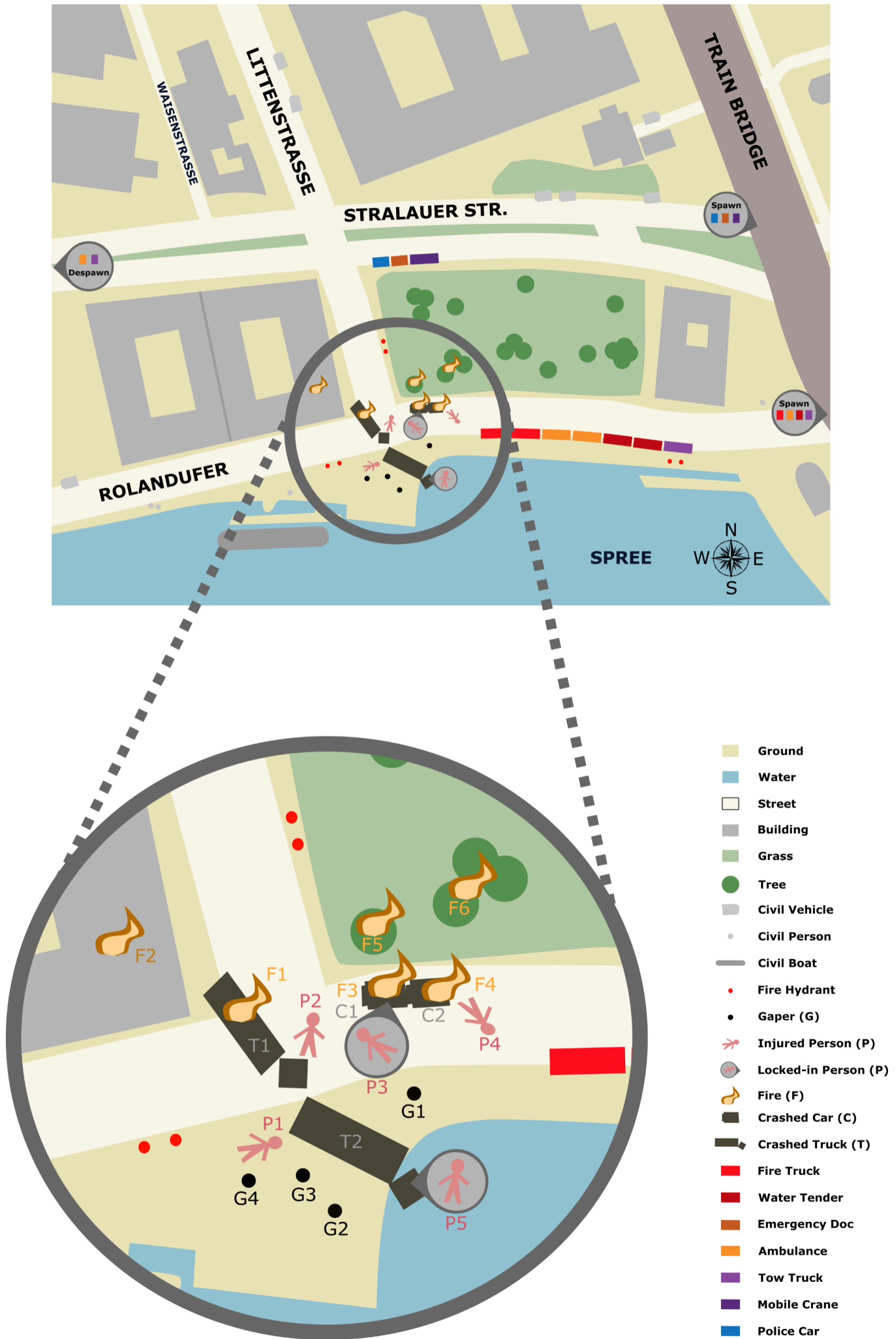


Fig. 3: Mission Sketch: Truck Crash in Berlin. The hotspots G1-G4, P1-P4, F1-F6, T1-T2 and C1-C2 are referenced in the mission schedule (Fig. 5)

Depiction of the accident in the scene

Truck T1 is burning on the street, truck T2 is half hanging in the water. You can see fires and injured people lying on the ground. Special bubbles also show injured, trapped people P3 and P5.

Exact course of the accident

A tired truck driver (T1) races south over the Littenstraße at too high a speed and crashes at the Rolandufer crossing into another truck (T2) coming from the west. This truck is thrown by the force to the bank of the Spree; the driver loses control over her vehicle so that her cab hangs into the Spree and is only held by the rest of the truck. The driver is then trapped in her cab (P5). The first truck catches fire (F1), which jumps over to the building next to it (F2). Due to the truck accident, a car approaching from the east (C1) has to brake hard, resulting in a rear-end collision with a car behind (C2), in which both cars catch fire (F3 and F4) and light the nearby trees in the park (F5 and F6). The front driver is trapped in his car (P3) the other driver managed to get out and is lying injured on the ground (P4). A cyclist (P1) who came from the west also had to brake hard due to the truck accident and lost her balance, which is why she fell and was slightly injured.

Location and direction of the gapers

Near the landing stage of the boat tours on the Rolandufer, which are mainly visited by tourists, there are a few tourists who have seen the accident and are curiously watching what is going on. After they are sent away by the police they walk along the bank of the Spree. G2-G4 are walking into the west and G1 is walking to the east.

Injured persons: Where are they located on the map and why do they have to be there and cannot be somewhere else?

The injured people who were exposed at the start of the mission are near the car door from which they came out (P2 and P4), or in the case of the cyclist (P1), at the point where she slowed down so terribly that she fell and injured herself. The two trapped people (P3 and P5) are in their respective vehicles.

Emergency cars

The following emergency vehicles can be used in the mission:

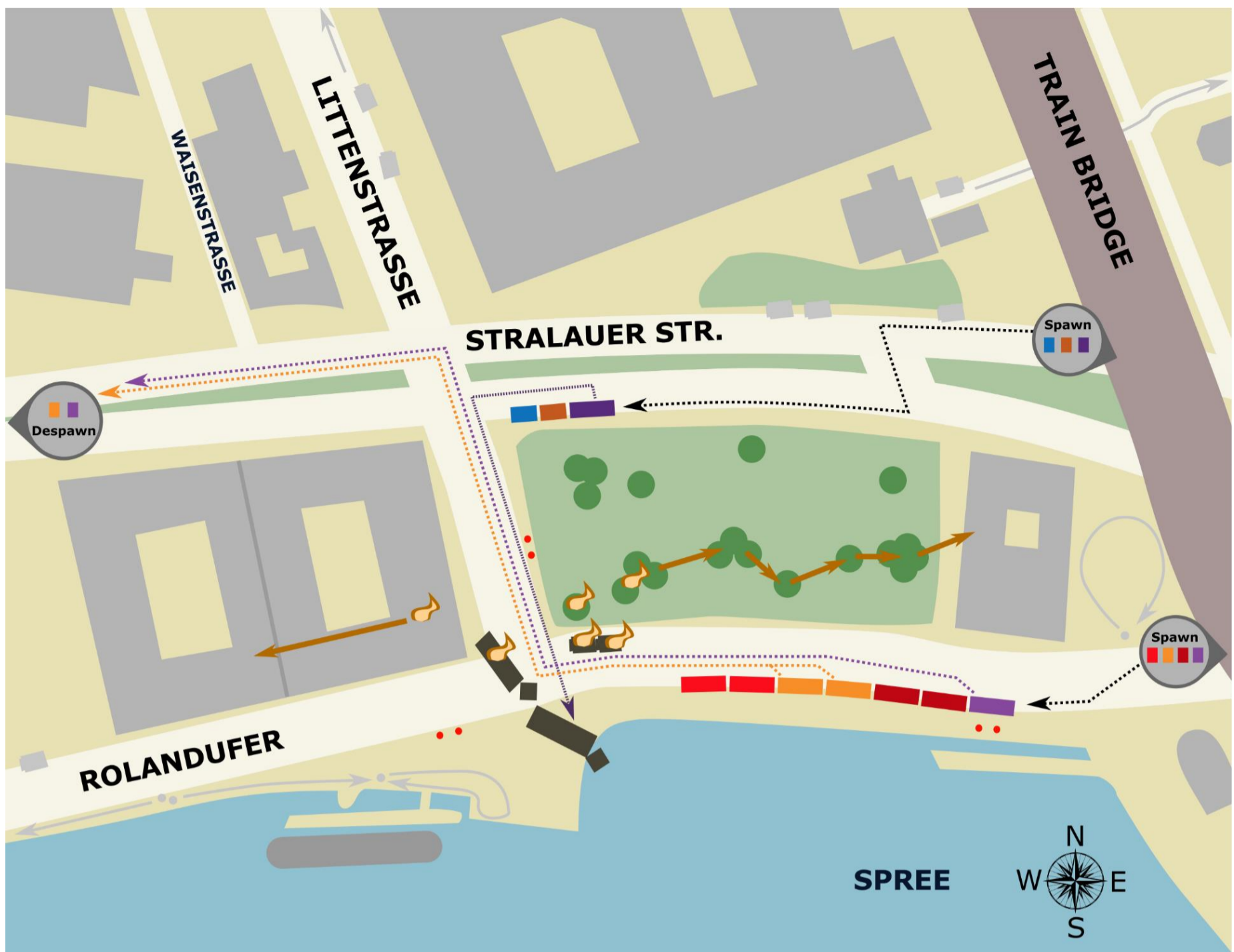
- 2 x Fire Truck
- 2 x Water Tender
- 1 x Emergency Doc Vehicle
- 2 x Ambulance
- 1 x Police Car
- 1 x Tow Truck
- 1 x Mobile Crane

The units park in the areas marked in the sketch. Since the police car and emergency doc vehicle are smaller than the other emergency vehicles, they need less space for parking.

The spawn points of the police car, emergency doc vehicle and mobile crane are in the eastern point of Stralauer Str. The spawn points of the remaining units are in the eastern point of the Rolandufer. The routes to their parking positions are shown in the dynamic sketch (Fig. 4) as are the paths of the ambulance, tow truck and mobile crane from their parking position. The despawn points of both the ambulance and tow truck are at the western point of Stralauer Str.

How do we nudge the player to find a good start, so that he does not feel overchallenged?

In this mission most of the parking positions of the vehicles are placed close to the accident, so that the player can easily see which units are responsible for each action. Also the fire hydrants are placed near the fires so that it is easy to send the firefighters to extinguish the fire with the fire hose which is faster than with the fire extinguisher. There are totally five injured persons, but you can only treat person p1 at the beginning because the others are either locked in their vehicle or lie too close to the fire so that the emergency doc cannot treat them. Such limitations help players because it is a limitation of possibilities which makes the cognitive load less heavy. Another limitation is that the paramedic teams, the tow truck and mobile crane can't work at the beginning of the mission because they all have to wait for other actions to happen first, so you don't have every unit working simultaneously. All of this makes the player feel not overchallenged. But they also won't be bored because of the six fires around them, so they have to manage their firefighters and water tenders.



- | | | | |
|--------|---|--------|--|
|➔ | Route of spawned Vehicles to Parking Positions |➔ | Route of Mobile Crane to Incident Scene |
|➔ | Route of Ambulance to Despawn Point |➔ | Route of Civil People/ Civil Vehicles |
|➔ | Route of Tow Truck to Despawn Point |➔ | Spreading Fire |

Fig.: 4 Dynamic Sketch

Fire: Which objects are initially burning and to which objects can the fire spread to?

The fire spreads in the directions shown by the orange arrows in the dynamic sketch. The fire of the building in the west passes to the building next to it after 100 seconds without being extinguished. The fire spreads from the tree to the east via the trees and group of trees to the eastern building, provided that the path is not interrupted by fire extinguishing.

Where do ambient civil persons and civil vehicles walk or drive and where do they not?

Two of the civilian people who are on the sidewalk at Rolandufer can walk towards the boat jetty and do a short tour there. A person on the sidewalk at the Rolandufer runs west and moves completely away from the scene of the accident. The civilian person who is in the east of the Rolandufer turns her circles there. The civilian vehicles remain parked in their place except two of them. These two – one is in Littenstraße and drives north, the other wants to drive east under the train bridge – are positioned and move in such a way that they do not get in the way of the route of the emergency vehicles. Both the civilians and vehicles serve only as decoration and enlivening of the scene.

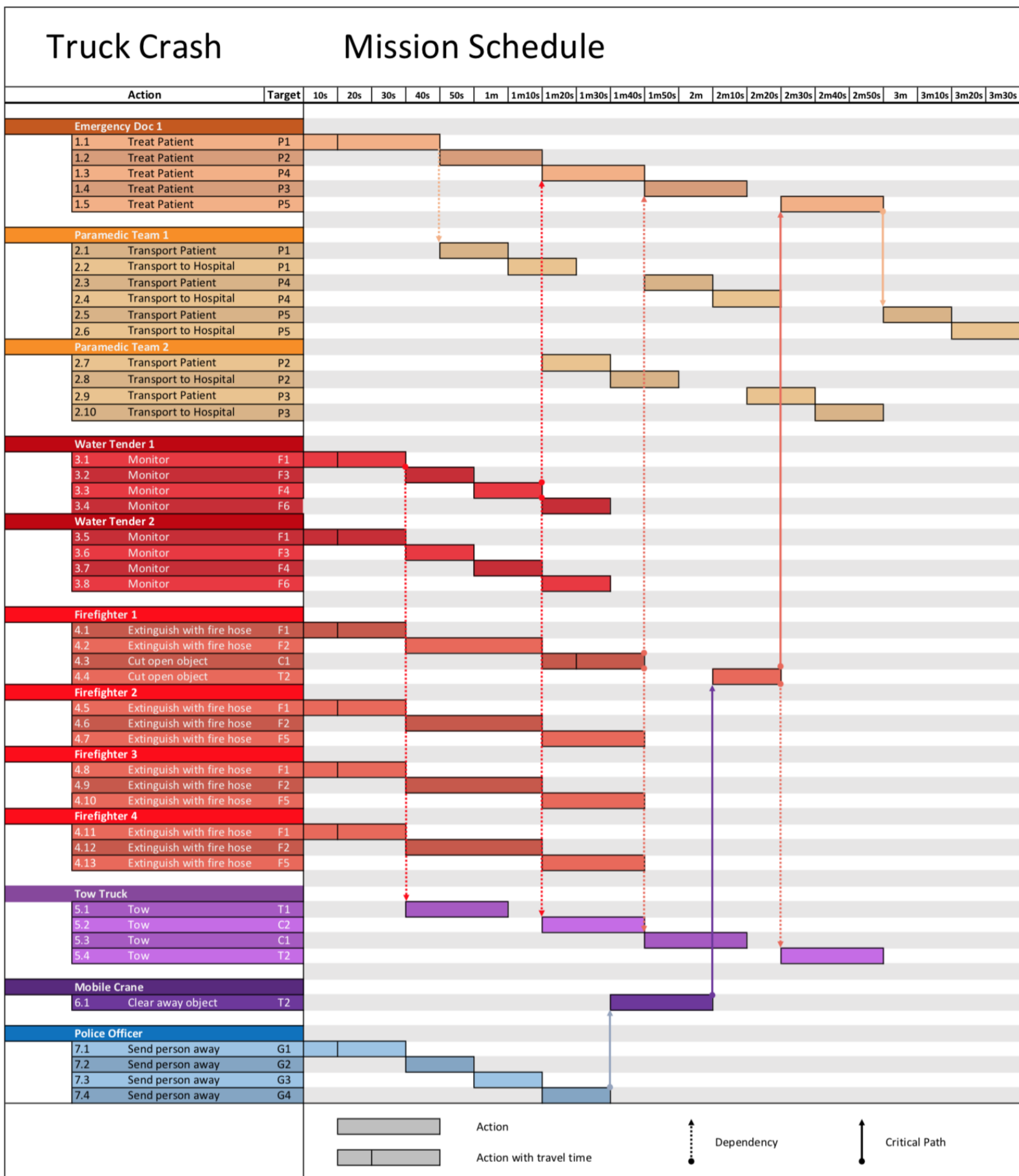


Fig. 5 Mission schedule

Player tasks: In which order should the player optimally proceed?

The optimal order of the actions of the individual unity is shown in the mission schedule (Fig. 5). The dependencies of the actions and the critical path are drawn here, showing the optimal path and the minimal time required to solve the mission.

Duration of the mission for a perfect run

The duration of the mission for a perfect run is in total 3m 30s. As the critical path of the mission schedule shows, you need to send all the four gapers away before you can use the crane to get the truck T2 out of the Spree. Then the driver P3 can be liberated, getting medical treatment and be transported to the hospital.

Estimated duration of an average run

If a player plays the scenario for the first time he doesn't know the importance of sending away the gapers as fast as possible. Additionally the player might spread out their firefighters and their water tenders which leads to a longer duration till the truck T1 is free of fire and can be towed by the tow truck. Also, if the player is too slow the fire might spread to the nearby building or trees which potentially results in a longer mission duration. So because of the different reasons the average run of the mission lasts about 4m30s which in total is one minute longer than the optimal run.

2. Instructions for the 3D Artist

Three of the art assets needed for the scene



Look of the FMS Spree-Comtess



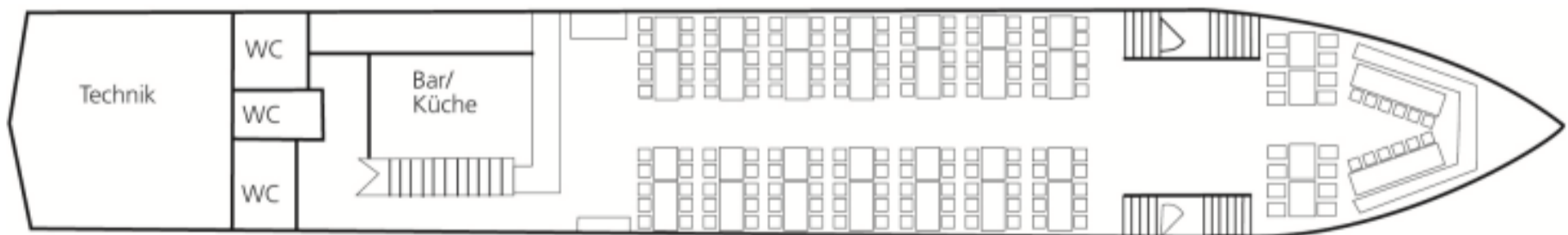
Side view



Front view



Rear view



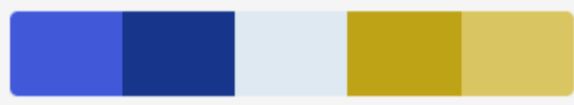
Top view

Civil Boat „FMS Spree-Comtess“

Name of the asset: model_vehicle_boat_spreecomtess.fbx

The modern saloon ship “FMS Spree-Comtess” takes tourists on a tour over the Spree in Berlin. In this mission it is parked on the jetty (see Fig. 3), since the next round trip does not start until one hour later. Therefore, there are no people on board at the time of the accident or the mission. The ship serves to decorate the scene and therefore only needs to be modeled from the left side and without an interior.

Color palette of the main colors



Size of the model (meters)

Length: 30 m

Width: 6 m

Height: 2,5 m

Surface of the model

Hull: smooth, slightly reflective

Windows: slightly transparent and reflective, reveals a dark interior

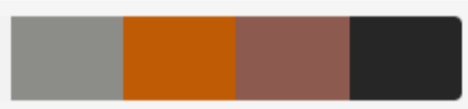
Building with typical Berlin architecture: Orientation to the architecture of the BEST Sabel vocational academy in Berlin

Name of the asset: model_building_vocationalacademy_bestsabel.fbx

Description of the asset: The architecture of the building of the BEST Sabel vocational academy in Berlin is typical for Berlin architecture because it has a block perimeter development and a start-up facade. Due to this fact this makes it a great art asset for showing the player that their mission is located in Berlin and not in another city. It is made up of two parts, each of them having their own courtyard which is also typical for Berlin architecture.

The asset is seated next to the core of the accident and it's already burning at the start of the mission.

Color palette of the main colors:



Sizes of the model (meters)

Building exterior:
Length: 25 + 25 m
Width: 25 m
Height: 15 m

Each courtyard:
Length: 7 m
Width: 13 m

Surface of the model

Wall: rough
Windows: slightly reflective, not transparent so you can't see the interior



Perspective Views



Top View



Front View

One of the Trucks involved in the accident

Name of the asset: model_vehicle_truck_t1.fbx

Description of the asset: The truck, which is the one hanging halfway into the Spree, is damaged sideways from the impact of the other truck. Refer to the top image for how a damaged side of the trailer should look like and refer to the second image for how it looks, if a truck ist hanging half-way down. The form of the truck itself should look like in the third image. But the colors of the truck should be the one from the truck in the second image: blue driver's cabin and grey trailer.

Color palette of the main colors:



Sizes of the model (meters)

Length: 14 m (driver's cab: 2,5 m, trailer: 11,5 m)

Width: 2.5 m

Height: 3 m

Surface of the model

Wall: rough

Driver's cab: slightly reflective, not transparent so you can't see the interior

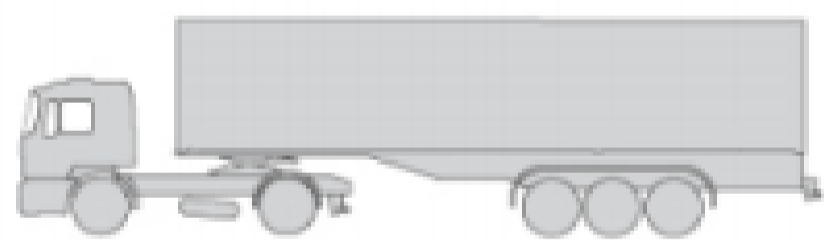
Trailer: mat



Crushed Truck



Hanging cabin



Side View