



Introduction

Natural catastrophes (NatCat), technical disasters triggered by natural hazards (NaTech) and man-made crises lead to large numbers of displaced or shelter-seeking people on a regular basis all around the globe. Climate change and insecure political situations in many areas of the world will further boost the number of refugees and migrants in the future, which requires a holistic approach in order to find humane and sustainable solutions. Architects play an important role – not just as designers of the built environment, but also as mediators between the different stakeholders of a project.

The TU Wien is one of the key members of the *Disaster Competence Network Austria* (DCNA) - a cooperation platform which links research institutions with public agencies and private companies working in the field of disaster management and recovery. Within the regular meetings, the Austrian Fire Service came up with the idea of "crisis-proof fire stations" which should offer the additional function of a crisis center for the local population. Crisis situations in Austria could evolve out of black-outs and/or the collapse of other critical infrastructure, extreme weather (eg. storms and floods), landslides, large fires or NaTechs such as chemical disasters.

Except from capital cities, the fire service in Austria is organised as a voluntary community service. That means fire stations are not manned permanently. The dimension of a fire station depends on the size of the town and is usually designed as a simple building housing trucks, equipment and basic functions for the fire men and women. Until now, these buildings are not intended to serve as a meeting point or service center for the local population in a crisis scenario.

Although there are many good examples all over the globe, the usual architectural design of fire stations is purely functional.

Design Task

Considering the above mentioned natural and man-made risks the task is the design of a crisis-proof fire station for a typical town of about 10.000 inhabitants. The building should serve as a "safe harbour" and a meeting point for the citizens in case of a disaster. That means that additional functions and spaces will be necessary in addition to the basic fire service facilities. You will be provided with a list of basic functions which the building must offer.

Regarding architectural design, a fire house offers a unique possibility to create a remarkable building, including a hose tower which may represent a landmark. The combination of smaller and larger spaces demands a harmonic architectural composition and allows interesting structural solutions.

Methods

Depending on the actual Covid19 situation we may have to switch to complete remote tuition. However, our current plan is to carry out a hybrid system with online lectures/consultations but also personal meetings on a regular basis. We will split the whole group in two parts (A and B) which allows personal consultations every second week for each student with designated timeslots to limit the amount of people in our seminar room. To ensure additional safety regarding Covid19 we expect everyone to wear a mask when entering our department.

It is possible but not required to work in groups with max. 2 participants. Be aware that Covid19 restrictions may stop you from meeting your group buddy, so please consider your choice carefully.

To get an idea about the basic requirements of a fire station, we are trying to organize an excursion to the fire house in Gänserndorf close to Vienna. This station represents a typical situation in Austria for a town of 10.000 inhabitants with a voluntary fire service and would give us great insights into the demands and processes within the building.

Schedule

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| October 14 at 13:00 p.m. | live introductory lecture via Zoom. Compulsory online attendance is required. |
| October 21 at 13:00 p.m. | excursion to the fire house in Gänserndorf (60+ min. train ride from Vienna) |
| October 28 at 13:00 p.m. | personal consultation at JASEC Group A |
| November 4 at 13:00 p.m. | personal consultation at JASEC Group B |
| November 11 at 13:00 p.m. | personal consultation at JASEC Group A |
| November 18 at 13:00 p.m. | personal consultation at JASEC Group B |
| November 25 at 13:00 p.m. | personal consultation at JASEC Group A |
| December 2 at 13:00 p.m. | personal consultation at JASEC Group B |
| December 9 at 13:00 p.m. | Online Intermediate Presentation via Zoom Group A+B |
| December 16 at 13:00 p.m. | personal consultation at JASEC upon request |
| January 13 at 13:00 p.m. | personal consultation at JASEC upon request |
| January 20 at 13:00 p.m. | personal consultation at JASEC upon request |
| January 27 at 13:00 p.m. | final presentation – we will decide a venue depending on the amount of projects |

Lecturers/Consultants:

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| TU Wien | Iris Mach | iris.mach@tuwien.ac.at |
| TU Wien | Thomas Rief | thomas.rief@tuwien.ac.at |
| TU Wien | Marcus Grundnigg | marcus.grundnigg@tuwien.ac.at |

Websites:

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| JASEC, TU Wien | https://jasec.tuwien.ac.at |
| Fire Brigade Gänserndorf | http://www.ffgf.at/ueber-uns/feuerwehrhaus.html |

Requirements and ground rules:

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| Registration: | Registration to this course only via the faculty's Pool Application system. We do not accept any other applications via email, phone or personally! |
| Compulsory attendance: | To pass the design studios, personal attendance is necessary at the introductory meeting, final presentation and at 50% of the regular consultations. Participants who do not fulfill the required attendance will automatically receive a negative evaluation without any exceptions. The reason for absence (illness etc.) is not relevant. |
| Always be on time: | Always be on time as you will only have a designated time slot. |
| Language of tuition: | International students are welcome! We will try to communicate most information in English. All participants must have good English proficiency and the final presentation (plans, project description) will be in English. |
| Required skills: | <ul style="list-style-type: none"> Design Competence: Aesthetic skills are basic requirements Construction and physics: No need to be an expert but a realistic, feasible and sustainable solution must be provided CAD and 3D Design: Accurate 2D CAD planning is necessary. 3D design skills are beneficial. |
| Evaluation criteria: | Design quality, functional and structural solution, quality of the model (real or virtual), presentation skills |

Location:

Seminar Room JASEC

Building Gusshausstr. 30 – access via first door on the right in the large driveway to the courtyard

<https://jasec.tuwien.ac.at/contact/EN/>

