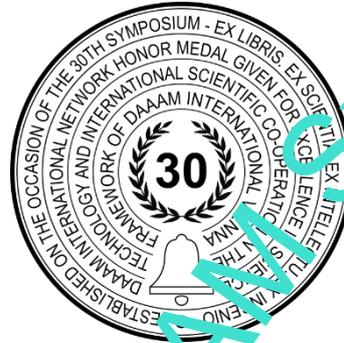


RISK ANALYSIS OF THE POST OFFICE

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Abstract

The issue of security accompanies humanity throughout civilized history. Since ancient times, ensuring security has been a priority. One of the main functions that every state must fulfill is security, not only internal but also external so that every citizen feels safe. Based on security, people choose the countries, states, cities, and buildings where they want to live. Security is one of the issues that is addressed in every area of life and is the second rung of Maslow's pyramid of needs. The present paper deals with the issue of protecting soft targets. Postal risk analysis has been chosen as the specific target. Explanation, modelling, and analysis methods have been used for the analysis.

This article aims to analyze the environment of the reference object – the post office. Using the analysis of the object's surroundings, the object, the traffic situation, the location of the reference object, and the description of the location, risks are specified and specific safety measures are subsequently proposed.

Keywords: analysis; post office; reference object; risk analysis; soft target.

1. Introduction

This article analyzes the reference object of the post office in the Zlin region. It looks at the reference object from the point of view of the layout, the near and far surroundings of the post, the layout of the object, and the overall security of this soft target. A post office is a place that has our sensitive data, financial resources, and personal data and for several factors, it could be a very attractive target for various types of attacks.

Even though this is an attractive target, in the Czech Republic, for the most part, post offices have undergone almost no or minimal reconstruction, and money has not been invested even in higher security or security. In the case of this article, a specific post office in Malenovice was chosen, which is located a short distance from the regional town of Zlin. This post office is interesting in that it covers nine territorial areas.

A post office is a place where several hundred people go every day. These people visit the post office regularly at similar times, which makes them a soft target. Vulnerability increases with the number of people in the facility. This article wants to point out the critical points of an object that is very well-known to everyone. The article aims to analyze possible risks and propose specific security measures. As described in the article by Vichova, K. et al. the world is constantly changing and new threats are coming, which also threaten the elements of critical infrastructure, which need to pay attention and increase their protection and attention to the issue of risk management. [1], [2], [3], [4], [5], [6]

- **Post Office**

The post office building is located in one of the local parts of the city of Zlin, specifically in Malenovice. The building is located in the center of Malenovice on Masarykova street. It is a relatively large post office, as nine territorial areas fall under this post office - such as Karlovice, Tečovice, Chlum, and Lhotka.



Fig. 1 – The location of the building and its surroundings

Legend:

A – Post Office	H – Goldsmithing
B – Cinema	I – Restaurant
C – Police Office	J – Apartments, Fast Food, Pizzeria, Wine Shop, Offices, Hairdresser
D – Hospital	K – Bar
E – Sports Center	Unmarked – Apartments
F – Grocery Store	Black point – Anti-nuclear Shelter
G – Dorm	

As already mentioned, the post office is located in the center of the village. In front of it is a recently built square with benches, grassy areas, some trees, and a water feature. Thanks to this, this space has become a popular place that many people visit every day. It is, therefore, constantly monitored by a "dome" camera located at the southeastern tip of the post office.

There is an anti-nuclear shelter underground, the entrance of which is right on this square and is shown by a small black dot on the map. The post office is part of a larger building, which also houses the office of the Zlin Municipal Police and the former Květen cinema, which is currently undergoing reconstruction and will become a cultural center.

To the north, this building is adjacent to the recently renovated Sportcentrum Malenovice. The sports center contains many training rooms, gymnasiums, playing areas, wellness facilities, and two restaurants. To the northeast are a grocery store, nursing home, and the office of the local part of the Zlin Municipality in one building.

The already mentioned square is the east of the post office, followed by a goldsmith's shop across the road.

Not far from it is also a recently built roundabout (picture 1), next to which the Restaurant Margherita is located. In the south, a large building includes offices, apartment units, a hair salon, fast food Mr. Grill, Pizzeria, a construction company, and a wine shop. Further south is the Hostinec Horní pub. To the west of the post office building is the local hospital, where there is a pharmacy and collection room in addition to doctors' offices. Unmarked buildings on the map are family houses or multi-story apartment buildings.

There is much traffic in this area every day, as approximately 250 m north of the roundabout is the main traffic route connecting Otrokovice and Zlin. There are parking spaces almost all around. These can be found at the Enapo store, the hospital, or in the street from the roundabout to building J. However, the post office building can only be accessed by vehicle with a permit on the road between it and the sports center. Everywhere else, bollards or other forms of barriers are erected. There is also a bike path right around the south side of the building. [1]

2. The Reference Object

The post office is one of three entities within the larger building. It also shares some walls with one of them, the former Květen cinema. These are the walls of rooms 5, 6, 7, 8, and 9, i.e., the upper walls in the picture below. The post office has 16 internal rooms, with the number 0 marking the outer corridor, which can also be used by wheelchair users or parents with prams.

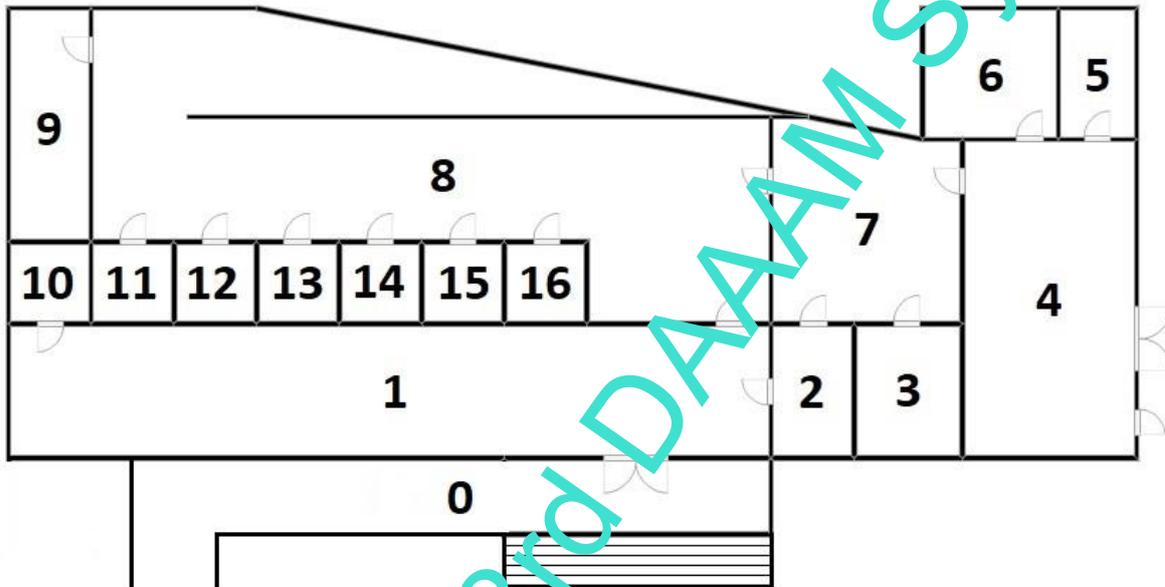


Fig. 2 – Floor plan of the reference object

Legend:

- | | |
|-------------------------------------|------------------------------------|
| 0 – access for wheelchairs or prams | 9 – partition of the discrete zone |
| 1 – entrance hall/waiting room | 10 – discrete zone |
| 2 – office manager | 11 – partition No. 1 |
| 3 – dressing room | 12 – partition No. 2 |
| 4 – receiving and sending shipments | 13 – partition No. 3 |
| 5 – WC | 14 – partition No. 4 |
| 6 – bathroom, showers | 15 – partition No. 5 |
| 7 – corridor | 16 – partition No. 6 |
| 8 – corridor, warehouse | |

Visitors are usually only allowed access to two or three rooms. The building is slightly elevated from the square, so they have to use the stairs or the corridor marked with the number 0 to get to the main door. They enter the entrance hall/waiting room through this door, take a serial number from the device, and, based on the chosen activity, are then called to the corresponding counter. If they do not want someone to follow them at the counter, they can use the discrete zone with the number 10. [1]

From the entrance hall, specifically to rooms 2 and 8, these are locked, and only employees have access to the keys. It is in room 2 that the manager resides in her office so that she can at any time easily supervise the operation of the post office. In both parts of the post office, the one accessible to visitors and the one inaccessible. Another door from the office leads to a corridor (7), from this corridor you can go to three more rooms (3, 4 and 8). Room 3 is a staff cloakroom. The space marked with the number 4 is used for receiving and sending shipments; it is also used for the entrance of employees into the building; there is a standard door just for employees, and next to it is a large door for easier handling of packages, etc. There is also a door to the toilet (5) and the bathroom and showers (6).

The last door from corridor 7 leads to room 8, mainly used as a warehouse for all parcels stored at the post office. From the warehouse, the door leads to the partition of the discrete zone (9) and individual partitions 11 – 16. Counter No. 1 (11) serves as the Checkpoint public administration point of contact for verifying documents and signatures and deals

with monetary services, ČSOB supplementary pension insurance, pensions, and building savings of the ČMSS. Counter No. 2 (12) deals with online betting, lottery tickets, phone coupons, and SIM cards, as well as postal savings bank services, Western Union money transfers, and also Checkpoints. [1], [2]

Counters No. 3 and 4 (13, 14) sell stamps and stamps, highway coupons, magazines, newspapers, and additional assortment. Counter No. 5 (15) deals with the submission of letters and parcels, the establishment of radio and television, the centralized collection of payments from the SIPO population, the debt collection of the DINO population, and the change of delivery of all incoming parcels (delivery). The last counter, i.e., No. 6 (16), issues letter items and packages.

3. Methods

There are many different areas to consider in risk analysis. Whether the location of the city, the location of the object and its surroundings, the premises of the object itself, the number of visitors, dangerous substances, the traffic situation, and the distance of the IRS. [7]

- **Location**

Malenovice is located near the regional town of Zlin Region, Zlin, in the southeast of the Czech Republic. They are a local part of Zlin, located at an altitude of 208 meters above sea level and approximately 7,000 inhabitants live there. Crime is very rare in this village. [1]

- **Location of the reference object**

The post office is located in the center of the village, where the village is divided into the so-called "old" and "new" Malenovice. Within the building, the post office is one of three entities, the other two being the former Květen cinema and the Zlin Municipal Police office. In addition, in the vicinity of the post office, there is a hospital, a sports center, a grocery store, a nursing home, and the office of the local part of the Zlin Municipality, then a goldsmith's shop, a restaurant, a pub, offices, a construction company, a wine shop, fast food, a hairdresser and a pizzeria. There is also an anti-nuclear shelter, the entrance of which is direct in front of the post office, and the premises of the shelter are partially under the post office itself.

- **Attendance**

It is one of the most visited parts of the village, precisely because of the post office, hospital, pharmacy, grocery store, restaurants, pizzeria, bars, fast food, and also thanks to the recently reconstructed square and sports center. Dozens of people in every season of the year spend time on the square every day. This number increases to hundreds per day in the summer months, when people buy and consume ice creams in abundance in one of the restaurants of the sports center. In the warm months, more people from nursing homes also visit the square. Visits to the post office itself are relatively constant; the only significant increase is around Christmas.

The largest number of people at once appear in this locality during the annual lighting of the Christmas tree directly in the square in front of the post office, accompanied by a musical program. On this occasion, many stalls with alcoholic drinks and other snacks are displayed in the square. The lighting always takes place on the first Sunday in December, and attendance ranges from hundreds to thousands of people. It can be assumed that when the reconstruction of the cinema into a cultural center is completed, the number of visitors will increase even more. Especially on weekends, when this center will host various social events, celebrations, balls, entertainment, etc.

- **Structure of the reference object**

The building has three entrances, but only one is accessible to visitors. In the event of danger, they would have only one possible escape route; otherwise, they would have to escape by breaking the windows, or the employees would let them into a section reserved just for them through the door to the manager's office or the warehouse. The post office is accessible to everyone, stairs and a corridor for wheelchairs or prams lead to the main entrance. However, this is not the case at the entrances for employees, which can only be accessed by stairs. A risk factor could be that the post office shares some of its interior walls with the renovated cinema. There are no hazardous substances in the building. The neighborhood is constantly monitored by a camera on the southeast corner of the post office.

- **Traffic situation**

The post office is close to the main traffic route from Zlin to Otrokovice. A large number of vehicles move every day near the post office. Many people pass through here and head for Lhota u Malenovic, Salaš, Karlovice, or Bohuslavice u Zlina. The traffic situation in this area has recently improved with the construction of a roundabout as you can see in Fig.

There are many parking spaces around the building, and they are always almost all occupied. Some parking lots have a three-hour limit, which the Zlin Municipal Police monitor. For this reason, drivers must have a clock in their car with a set parking time. Otherwise, they risk receiving a fine. Cars can only get to the post office along the way, with exceptions; otherwise, there are various types of barriers in the way. However, if someone wanted to get to the post office instead of by car, they would get there, for example, via the bike path, the grassy area near the square, etc.

- **IRS**

If necessary, IRS forces can be on site within a few tens of seconds. As has already been mentioned several times, the office of the Zlin Municipal Police is part of the building that also houses the post office. The presence of the office and frequent patrols in the area are also a form of deterrence against potential criminals. The police of the Czech Republic would be on the scene within 5-10 minutes. Depending on the traffic situation, it could be determined whether he should come from Zlin or Otrokovice. The ambulance from Prŕstná could also be at the post office within ten minutes at the latest. As for the firefighters, the volunteer firefighters from Malenovice could be on the scene in a few minutes, and the professional firefighters from Otrokovice in 5-10 minutes.

- **Object category**

Since the object of interest is the post office, the potential risks can be significant. Dozens of people (employees + visitors) are constantly moving in the building, and relatively large sums of money are also located there. For this reason, increased attention and emphasis on safety are definitely in place. The disadvantage is that there is no physical security guard in the building, but it is at least equipped with a camera system and emergency buttons. The post office opens at 8:00 a.m. and closes at 5:00 p.m. on weekdays. On Saturdays, it opens the same but closes already at 10:00. It is closed on Sundays.

- **Risks**

The main risk factors for this object are the increased number of people daily. It is even amplified in the summer months or in case of some events. Another factor is the layout of the building itself, where it is relatively difficult to escape in case of danger if the primary exit is blocked by, for example, fire or an attacker, etc. A more complex traffic situation can also be a risk, which could partially slow the arrival of the IRS units. A big risk can be that there are not enough barriers and obstacles in front of the post office so that the car cannot go off the road and get to the square. In the case of a large number of people, this could be catastrophic. The main factor can be marked high the amount of money deposited at each post office. This can be a "lure" or a would-be offender.

- **Security measures**

Multiple entrances, especially for visitors, could facilitate escape in case of danger. It would help to build a second entrance door, for example, opposite partition No. 1 (11). Another measure could be the hiring of at least one physical security worker, who would be present in the entrance hall and ready to intervene if necessary. Surveillance would also be suitable after closing time (especially at night); combined with a camera system, it would already be high-quality security.

The problem with the possible entry of a car or other means of transport could be solved by building pillars or a continuous railing or other elements in the entire vicinity of the square. If there were bollards, people would have no problem getting to the square while a car would have no chance to pass through this barrier. Barriers could be built on access roads, which would, for example, drive into the ground after verification by remote control. In this way, entry would be ensured for those who have permission to do so, while at the same time, the entry would be denied to others. [8]

4. Conclusion

There is a need to proactively think and act in the security prevention industry these days. Nowadays, the spotlight is placed on objects with high turnover, but the goal of all of us should be a way to solve the issue of object safety not only in big cities and places with the highest concentration of people, but we should strive to set safety standards that should be observed across the board.

This article was focused on a small reference facility in a small town that showed us that the technical aspects of security and the overall security view of this facility were lacking. The securitization problem, threatening soft targets is a risk to everyday life. Analysis of current objects that are used daily and their corrective safety measures are a must and should be standardized across the board. This article deals with the analysis of the Post office object with specific examples of improving the security of the object. These security measures were individually chosen for a specific reference object. More objects are visited every day and have a low level of security. Experts are constantly working on

security elements and improving the security of objects, however, it is important to standardize across the board, which would determine the necessary level of security. We would like to discuss the topic of normalization in a future article.

5. Acknowledgments

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6. References

- [1] Pošta: online [online]. Zlin, 2022. Available from: <https://www.postaonline.cz/detail-pobocky/-/pobocky/detail/76302>
- [2] LUKÁŠ, Luděk. Teorie bezpečnosti: Teorie a praxe ochrany majetku a fyzické bezpečnosti. 2017. Zlin: VeRBuM, 2017. ISBN 978-80-87500-89-7.
- [3] LUKÁŠ, Luděk. Teorie bezpečnosti: Teorie a praxe ochrany majetku a fyzické bezpečnosti. 2017. Zlin: VeRBuM, 2017. ISBN 978-80-87500-99-6.
- [4] Vichova, K[aterina]; Hromada, M[artin]; Valasek, J[armil] & Paulus, F[rantisek] (2020). Comparison Analysis the Use of Modern Technologies by Fire Rescue Service, Proceedings of the 31st DAAAM International Symposium, pp.0535-0541, B. Katalinic (Ed.), Published by DAAAM International, ISBN 978-3-902734-29-7, ISSN 1726-9679, Vienna, Austria DOI: 10.2507/31st.daaam.proceedings.074
- [5] Vulcanovic, S[rdjan]; Zizakov, M[arina]; Vasic, S[tana]; Delic, M[ilan] & Srenec, N[emanja] (2019). The Impact of Occupational Health and Safety (OH&S) Management Systems on Risk Management Practices, Proceedings of the 30th DAAAM International Symposium, pp.1188-1195, B. Katalinic (Ed.), Published by DAAAM International, ISBN 978-3-902734-22-8, ISSN 1726-9679, Vienna, Austria DOI: 10.2507/30th.daaam.proceedings.167
- [6] Malatinsky, A[dam]; Drofova, I[rena]; Sousedikova, L[ucie] & Hromada, M[artin] (2021). Fire Safety Threat Risk Analysis for Soft Target, Proceedings of the 32nd DAAAM International Symposium, pp.0586-0592, B. Katalinic (Ed.), Published by DAAAM International, ISBN 978-3-902734-33-4, ISSN 1726-9679, Vienna, Austria DOI: 10.2507/32nd.daaam.proceedings.083
- [7] KALVACH, Zdeněk. Základy ochrany měkkých cílů metodika. Praha: Ministerstvo vnitra České republiky, 2016.
- [8] LUKÁŠ, Luděk. Bezpečnostní technologie, systémy a management. Zlin: Radim Bačuvčík - VeRBuM, 2015. ISBN 978-80-87500-19-4.