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TECHNICAL SECURITY OF ELEMENTARY SCHOOLS

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ABSTRAKT
Práca sa zaoberá bezpečnostnými systémami, ktoré sa používajú na zabezpečenie základných škôl, vyhodnocuje ich súčasné nedostatky a navrhuje zlepšenie pomocou tiesňových a integrovaných systémov.

Kľúčové slová:
základná škola, technické zabezpečenie, organizačná štruktúra.

ABSTRACT
The work deals with security systems that are used to secure primary schools evaluate their current shortcomings and suggests improvements through emergency and integrated systems.

Key words:
Elementary school, technical security, organizational structure.

1   SOFT TARGET - ELEMENTARY SCHOOL

Elementary schools represent places with high concentration of people, mainly children aged 4 to 14 years, which are special protected by a group of people. The more could become possible soft targets for terrorist attacks or unstable individuals who themselves want to attract media attention. Medialization some states impedes the way that the law establishes rules that do not allow the media, to these events published in the public media, which for attackers results in failure of its goals (see. Breivik of Norway, who still has a lot of publicity and presents for him people like pattern, how to get your attention in the media).

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For evaluating the properties of schools is a school divided by the size, which is the most important parameter that affects the internal organization of the school, you can use the number of students that the school teaches, as shown in the following table.

Table I. Distribution of primary schools according to size.

Size of school	Number of students	Basic activities	Other activities
small	until 100	Elementary school 1st to 5th year, Kindergarten, school club	irregular activities
medium	100-400	Elementary school 1st to 9th year, Kindergarten, school club, school canteen food	regular activities - reduced range
large	over 400	Elementary school 1st to 9th year, Kindergarten, school club, school canteen food	large regular activities

Small school, mainly village-type, teaches kids the numbers up to 100 pupils. It incorporates teaching first grade, ie 1 to 4 or 5th grade, then kindergarten and after-school clubs. Various other irregular activities such as competitions, carnivals, etc. Operates on its premises or on the premises of the public.

Middle school teaches 100 to 400 pupils. They are located in the catchment villages or small township. Their activities include teaching first grade 1 to 5 classes, teaching II. degree, it is 6 to 9 classes. Furthermore, there is one kindergarten, school clubs and other activities on a limited scale.

Great school, with the number of pupils over 400 children, is characterized in that it teaches basic lessons 1 to 9 classes, kindergarten, school clubs, school dispensary diet for people who are not school employees and regular large-scale activities that provide teachers who have access to school space and are not employees of the school.

2   SMALL SCHOOL

Small school organizational structure is shown in Fig. 1. Its organizational structure is relatively simple and the possibility of penetration of potential perpetrators is relatively low in compliance with basic safety measures. In my daily schedule in the

morning will bring parents, siblings, grandparents and friends pupils to school by a certain time.

At the entrance to the building's janitor, who guards the entrance and all the people he knows personally and can thus let into the locker room where pupils have switched shoes and accessories lay in the winter. This is important at the beginning of the year when coming pupils and they do not know the rules of school and need the support of their loved ones. Upon the deadline for the arrival of caretaker locks the entrance door. Furthermore, pupils in each class will sit at their desks and tuition. The teacher checks the number of pupils, and if someone is missing, check if it is excused. If not, send SMS to parents asking for the absence of the pupil and the child should be traced.

The situation is relatively simple, because parents and acquaintances are identifiable and know personally, so the penetration of strangers is virtually impossible. Furthermore, the control of the number of pupils is easy. School employees is a director, teachers, cooks and cleaners. For these employees can easily verify their work and psychological characteristics. Working team is small and there is cabin fever rather than an attack on the children of a staff member. For employees and internal organization has full responsibility director. Other objects, which cooperates with a small school, a municipal office, suppliers of services and materials to the kitchen. For its activity using mostly equipped with a special door bell. Every such person can take over a school employee and thus ensuring safe movement of persons in the school building.
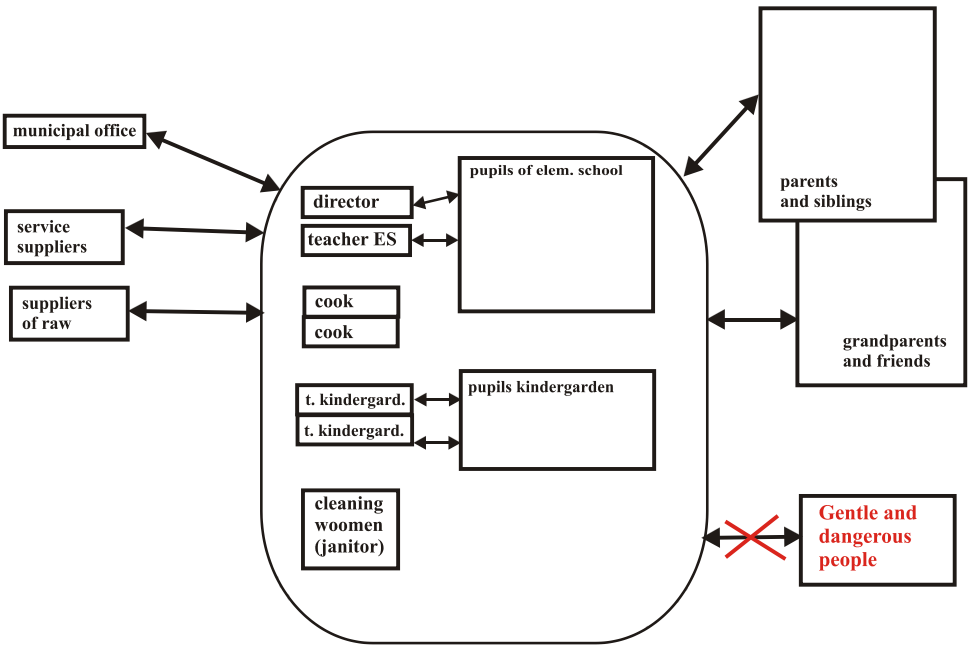

Figure 1 Organizational structure of small school.

The following fig. 2 shows an example of technical security of the small school object. The school is situated in object with adjacent land for outdoor activities of pupils. The yellow line indicates perimeter protection, blue line protective shield building and the red line the entrances for students and the supply of goods or services.

The current state of security is implemented so that when students and staff leaving the building, arming the building is done. This starts the sheath and the inner protection of the building for the protection of property inside the building.

Figure 2 Technical security of small schools.

As explained above, the current security status of small schools is relatively high due to good regime measures. For communication with inputs are used basic bells without a direct call to the recipient. So it is time consuming to handle the arrival of a stranger. Therefore, there is proposed an internal communicator for the elementary school, which would have direct key presses for specific employee. Using a video phone has a great advantage in the visual inspection of anyone entering. After verifying a person can remotely let in opening entry if they belong to the circle of people known and vice versa provide a guide to school if he is a man unknown, or to devote himself. The problem of current video communicators is that they offer a greater variety of target recipients, optional by simple function keys. Another advantage would be if communication devices would be portable (mobile) and the staff would wear with them. The second option would be stable devices in individual classrooms and school premises.
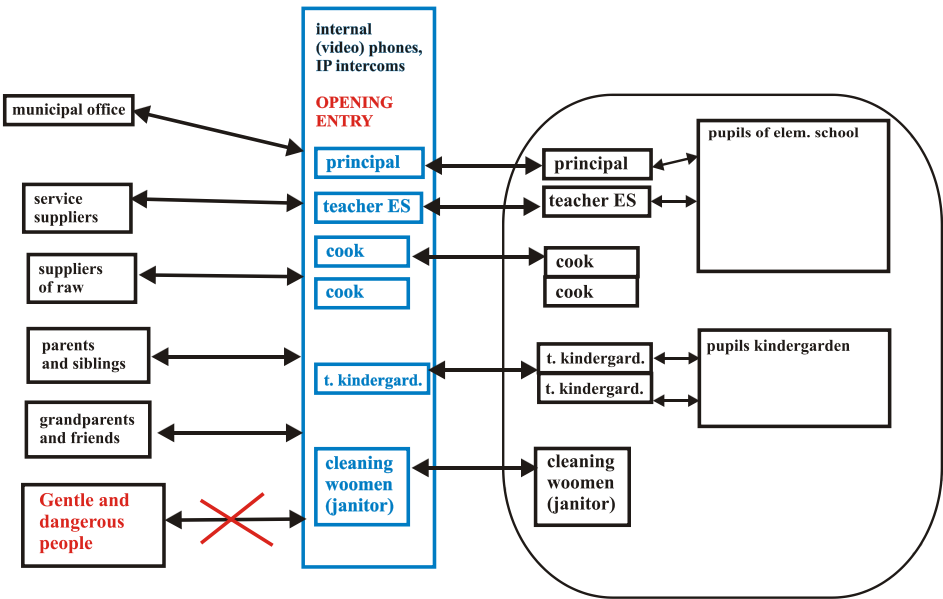

Figure 3 Technical security of small schools.

Search for pupils on their way to and from school would be suitable simple and fast tool for sending SMS and E - mail resides on a server (Fig. 4) where the client access each teacher. The advantage of this solution is that the information concerning the exchange of information with those responsible for the pupils would have been clearly concentrated in one place, which would allow sharing among teachers, or after the definition and implementation of access rights also parents. Even these small schools now have their websites to provide information to the public about the activities of teaching, but also for various events.
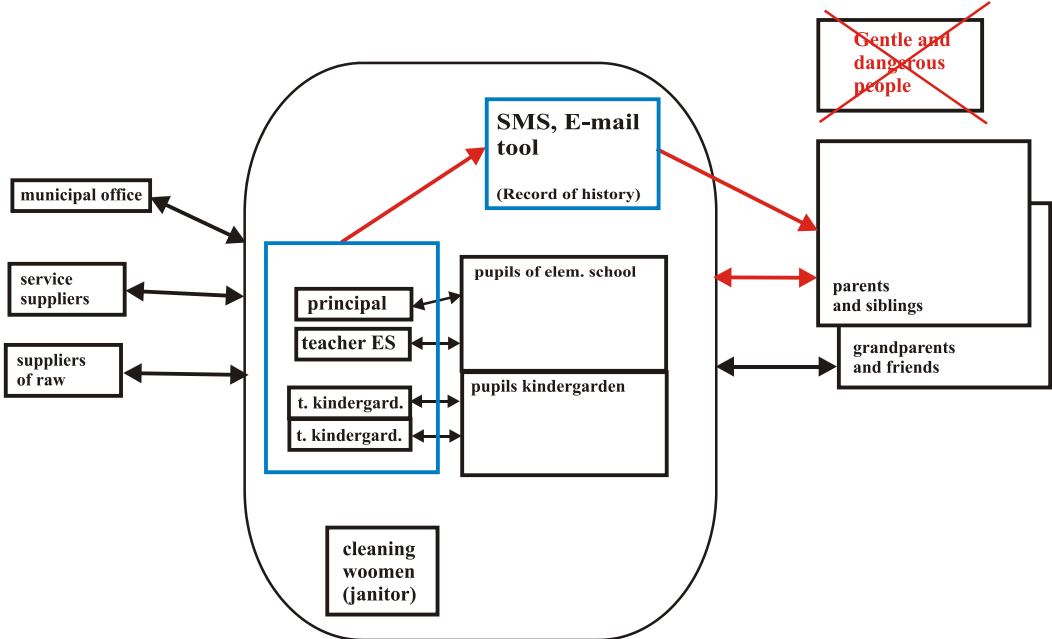

Figure 4 Tool for sending SMS and Email.

The default for small schools is use of I&HAS system, but it only works in full mode guarding, when all students and employees leave the building. In the event that there would be arming the perimeter (yellow line) or shell (blue line) to protect the building envelope, the daily regime I&HAS is not used. In this case, the system protects the lives of persons who are inside the building.

Another feature that can extend this system is to use emergency buttons that owned mainly teachers or school staff who come into contact with the public and students. The lowest level of distress would mean calling the school principal, a higher degree would mean calling the emergency squad ARC and the highest grade then calling the state police. This is shown in fig. 5.
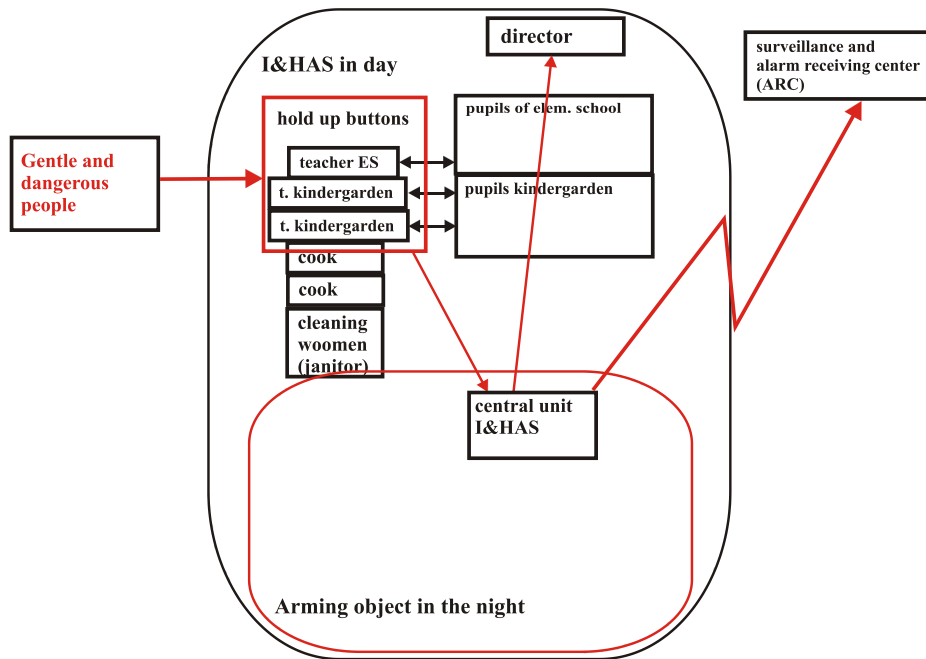
Figure 5 Modernization of technical security small school.

3   LARGE SCHOOL

Situation in the high school in comparison with a small school is completely different, as shown in fig. 6. Teachers already know personally all the students, let alone their families and friends. Regime arrival of pupils into school is similar, but not janitor or supervising teacher is able to memorize hundreds of students and identify among them the foreign student. The most difficult situation is in the beginning of the year when new parents are accompanied by first-graders to the dressing room and help them with changing clothes. After the arrival of pupils to school janitor locked the main door and a stranger comes into the school building from the outside so that either rings the janitor or the school office.

In the case that the pupil does not come to school, the absence is written to the class register and must be settled within the next day, not immediately. Also, excuse of the pupil is realized through the office school and it is processed until the next day. It is why there is a delay.

Other school services in areas such as catering, schools have secured such a manner that external boarders have their own entrance to the dining room with a simple access system, where they are using an identification element - the card will open the entrance door. Under normal circumstances, these people have no access to the outside dining area, a school.
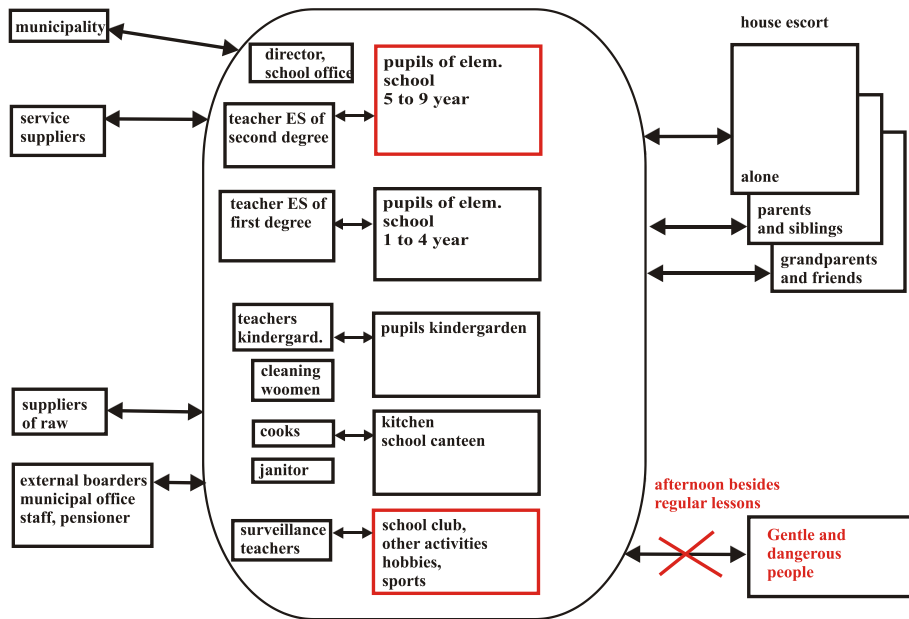
Figure 6 Organization structure of large school.

Technical support of school is done mechanically by securing of the building envelope on the ground and indoor space with I&HAS, as shown in Fig. 7. The electronic security system is only used at the time when all the pupils and staff leave objects without connection for ARC, with only alarm reporting to the Director and his representatives.
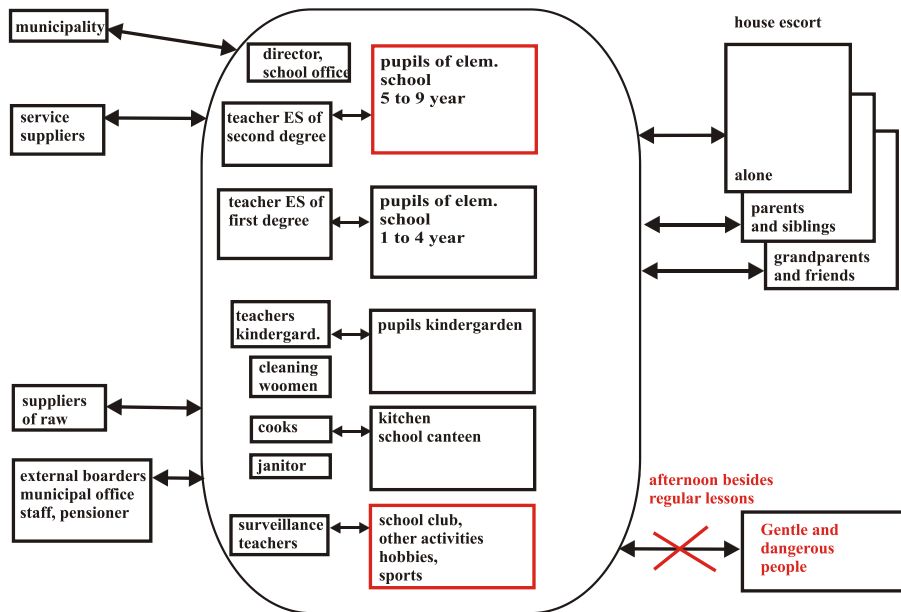

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Figure 7 Technical security of large school.

To improve internal communication and increase the visibility of the access of foreign persons should install systems, as is shown in Fig. 8. In the areas of movement of people and potentially the possible intrusion of unknown and dangerous people must be installed access points with a capacity of passages appropriate to the specific use. In addition to the record of the people who passed through the gates, it is appropriate to supplement those places on internal communicators that allows direct connection between the visitor and the specific person. In large schools, it is realized directly with the office of the director of the main entrance. For suppliers of raw materials should be directly linked to the kitchen. To access external diners in the dining room just an access point using a proximity card and a video recording of individual passages
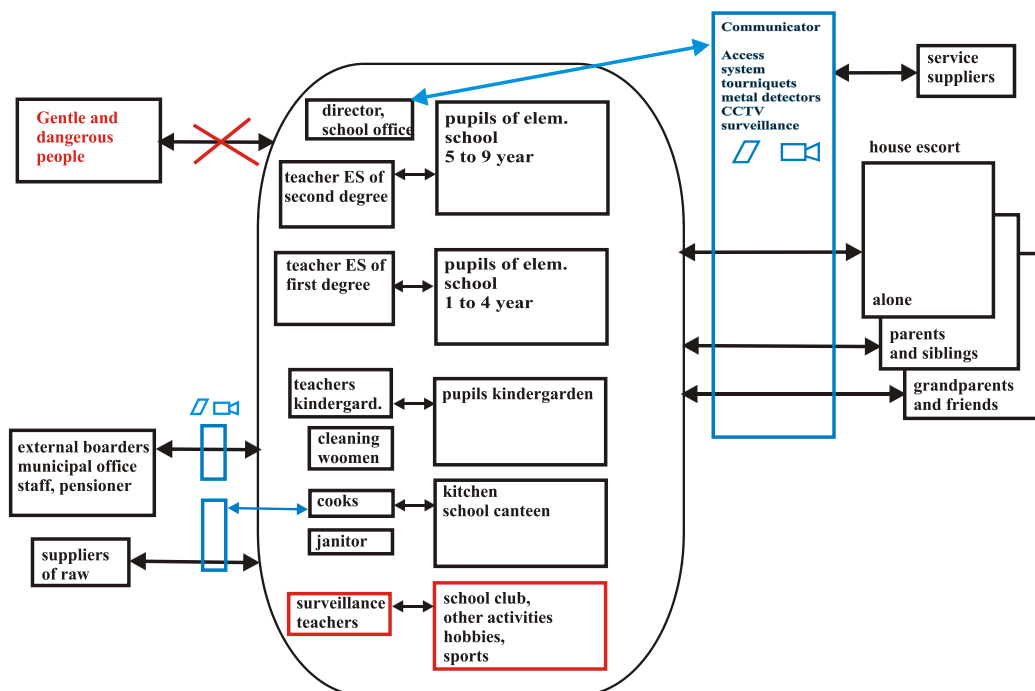

Figure 8 Technical security of large school.

For the main entrance, which is used for the arrival and departure of students from school, it is necessary to use such a system approach, which has high passages. If

we want to have maximum security, they must be installed turnstiles that cannot be skipped, or otherwise scour and pupils are identified and redundancies individually, not in groups. In this case there would have to be installed turnstiles installed in parallel in a number of 5-10 pieces to increase the capacity of passages, or they would have come at a precise time and walk on the stage, which is when the number of 400 or more pupils fairly challenging task. In this case, it may operate an access server that accurately records the comings and goings of individual students and problems with attendance or truancy can be better traced. Another advantage would be that the class teacher should date overview of pupils who did not arrive to school and are unexcused.

Fig. 9 shows a wider use of I&HAS. The basis is the use of the system in day and night mode. In night mode, the system would arm as it is currently used, which is facility without pupils and people. In day mode should be used for emergency buttons in the minimum version that should be available to all teachers and that in case of emergency will call into the principal's office, at a higher level of distress then ARC and, in the case of a critical event then directly to the Police of the Czech Republic.

Other function would be full roofing of the building shell (Fig. 7 - blue line) except the access points. Last usable functions are guarding of the perimeter (Fig. 7 - yellow line) in day mode. This is in practice difficult to implement mainly because of regular maintenance necessary to the surrounding vegetation, which is in the example costly and difficult especially on the bank of the river flowing around.
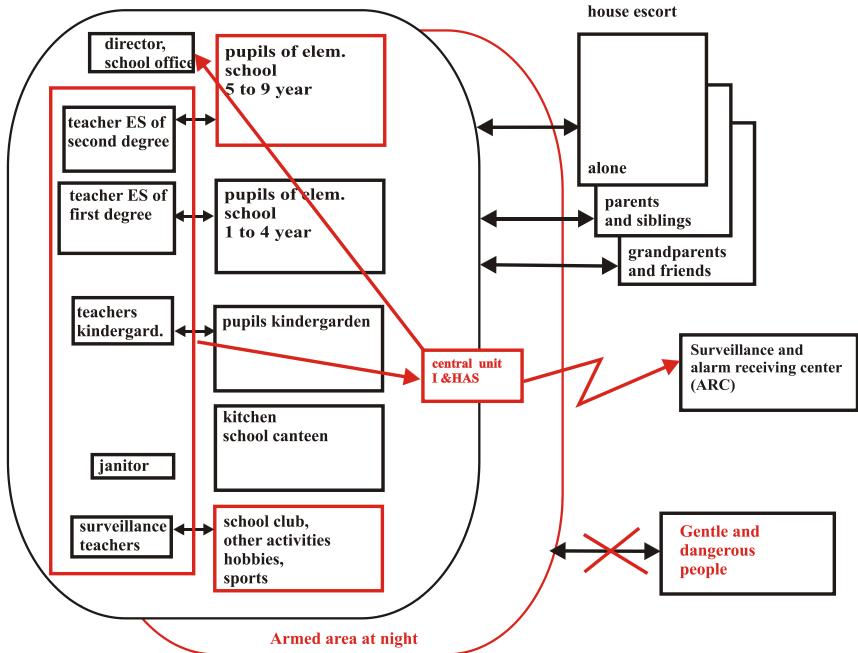

Figure 9 Technical security of large school.

As is evident from the previous procedure, security systems I&HAS, ACCESS and CCTV cooperate here. The best solution is therefore the realization of an integrated security system. For the realization can be used systems, which are commercially available, where it is necessary to respect the extensiveness of the system.

CONCLUSION

Currently, it can be stated that Czech society is very calm. Compared to countries in Europe or the world, the local crime rate low. Another big advantage is that they are not at the extended arms in large quantities, as is common for example in the USA.

The disadvantage of our society is that society is naive and is not trained to security risks and just when addressing the problem of security for citizens of the State. The citizen does not know how to take care of their own safety and security in the nearby area.

Currently, great emphasis is placed on prevention against various threats. The goal should be education for active, mature multicultural society, because own world cannot be completely closed.

Against the Attacks of criminals it is possible to use standard regimen measures and classic technical support.

Against the threat of terrorists and unpredictable fools can be used costly technical support (X-rays, metal detectors, drug detectors) and demanding regimen measures.

Generally, the particular security level of a primary school should be tailored to the level of criminality of the locality.

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