CULTURE OF WORK SAFETY IN THE IMPLEMENTATION OF ANTROPOGENIC, CONSTRUCTION OBJECTS

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Summary

Each construction site is realized in concrete reality. Construction management along with workers using tangible and intangible assets perform construction works, resulting in a building object. The work should be done in a safe way. For safety work it has the greatest impact safety culture viewed in terms of individuals, companies and the environment.

Keywords: anthropogenic objects, construction, culture, safety, safety culture

1. Introduction

The man is a living creature having reason and free will to live must meet their needs. One group of human needs are social needs and among these physiological needs related to food, health and education – housing[1]. Apartments are treated as units of accommodation and auxiliary, with a separate entrance, separate compartments solid construction, enabling human residence and conduct an independent household[2]. Thus, the apartments are part of a building and as specific anthropogenic objects that meet the following conditions:

– they are situated on the ground and fixed to the ground,
– have a permanent nature and have been built in order to satisfy human needs,
– result from processes of construction of dominance provision of construction services.

Design, construction and operation of construction objects of anthropogenic regulated by Law Building[3] completed the requirements of the Environmental Protection Act[4] in the following areas:

– security structure – the loads acting on the construction object in the design, erection and operation can't cause damage, failure or disaster part or all of an object or damage to installations or installed equipment as a result of deformation of the load-bearing object (improper materials, machinery, equipment, technology, organization),
– fire safety – construction works must comply with the fire and in the event of fire, provide carrying capacity of the structure by a predetermined period and prevent the spread of fire and smoke during the evacuation or rescue people in a different way,
– safety – building structures during use must not pose the risk of accidents caused by slipping, falling, collision in burns if electric shock,
– conditions of hygiene and health – building structures must not endanger the health and life of residents,
– terms of environmental protection – building structures not endanger the environment,
– protection against noise and vibration – building structures should protect the residents and people in nearby against noise and vibrations – noise protection may not exceed the level of a threat to the health and life of humans,
– energy savings – building structures should be designed and constructed in such a way as to keep down the amount of energy required for their use, taking into account local climatic conditions and the needs of users.

Technical knowledge, organizational and knowledge of safety and health supplement economic knowledge in the above mentioned areas used in the design, erection and operation of buildings is essential in solving the problems of work safety culture related to the erection of building objects anthropogenic.

The man is a living creature having reason and free will to live must meet their needs. One form of raising funds to meet the needs of the job.

The work is the notion of the problems of human activities. According Kotarbinski[5] "... work ... it all weave acts having the character to overcome difficulties in order to fulfill one's essential needs." For the purposes of this paper the author proposes the following, short and clear definition: work is a conscious effort of physical and mental purpose. The work is therefore a fundamental source of livelihood man, his knowledge, experience and skills evaluation. Workers sees not only the operations to ensure the material means necessary for life, but treats it as a natural need, social obligation and a condition of their own development. The work is the main factor determining the use of the possibilities of human life, plays a crucial role in its development and is the natural basis of society and requires not only the acquisition of appropriate knowledge and practical skills, but also basic knowledge about work safety and health[6]. Currently we observe new trends on the identification of the causes of accidents, which turn towards safety culture.

2. Safety Culture

State Labour Inspectorate analyzed accidents at work, he has made recognition of their causes and classified them into three categories: technical, organizational and human (Figure 2.1). The compiled statistics dominated by organizational and human causes.

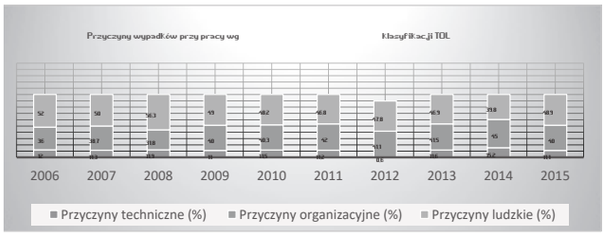

Fig. 2.1. Classification of the causes of accidents at work
Source: own study based on reports from GIP 10-year period (2006-20015)

Historically, the concept of "culture of safety" referred to the society, groups and individuals. You can tell – relate to the different forms of organization[7]. In management science usually it was taking the three meanings of the concept of the organization[8], it is:

1. organization in the sense of substantive – as an entity, of a complex of related parts. In this sense, the concept of the organization was synonymous with the concept of organization (eg. this organization is highly disability).
2. organization in the sense of functional – as the process of making things complex. In this sense, the concept of the organization was synonymous with the concept of the organization (e.g. the organization of sporting events is the domain of the committee of sports).
3. organization in the sense of attribute-based – as a set of characteristics for things organized. In this sense, the concept of the organization was synonymous with the concept of organized (e.g. in this company there is excellent organization).

The concept of organizational culture introduced to the scientific literature A.M. Pettigrew (1979), while the earlier R. Blade and J. Mouton (1964) has described the cultural phenomena and tried to explain certain phenomena of social organization, referring to culture, assuming that the organization creates its own specific culture, whose elements distinguishing it from other cultures are symbols, myths, rituals, values and norms[9]. These elements (Figure 2.2) produced a specific atmosphere, shaping the relationship between employees e . g. construction site and its management and employees between the general contractor and subcontractors works and learned to react to developments and allow members to distinguish one group from another.

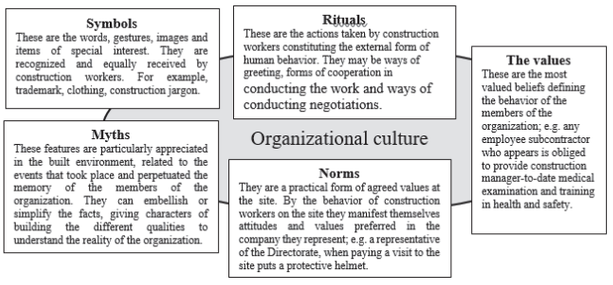

Fig. 2.2. Elements of organizational culture
Source: own elaboration based on. B. Kożusznik, human behavior in organizations, PWE, W-and 2002

J. Stoner and Ch. Wankel treated culture of the organization as a set of norms, values, attitudes and behaviors of the community, which was an integral part of organizational life, and flowed from it conclusions for management[10]. In contrast, Vol. Sikorski described it as a system of patterns of thinking and acting that were fixed in the social environment and the organization were relevant for the implementation of its formal objectives[11].

E. Schein defined organizational culture as a pattern of basic assumptions regarded as reasonable and appropriate to provide new members as an appropriate way of perceiving, feeling, and respond to these issues and identified three levels of organizational culture:

– basic assumptions, which formed the core of culture and provide the basis for the other components. They were responsible for the problems of the essence of existence, human nature, reality and truth.
– norms and values, which were more noticeable and observable than the basic assumptions of the cultural level of the organization, which expressed the views and attitudes of members of the organization,
– artifacts and products, which accounted indicator of organizational culture the most observable and were treated as material culture of the organization[12].

Safety culture was and is part of the wider culture. Behind the "fathers culture" of safety is considered D. Zohar[13], N. Pidgeon[14], F. W. Guldenmund[15]. Trying to explain certain phenomena in organizations, reference was made to culture, assuming that each organization creates its own specific culture, whose elements distinguishing it from other cultures are symbols, myths, rituals, values and norms[16]. These elements produce a specific atmosphere and shape the relationship between the people working in the organization and learn to respond to changes and allow you to distinguish members of one group from another. According to R. Studenski[17] processing at the desired culture of safety it is now recognized as the main task of security management and refers to individuals, companies and society (Table 2.1).

Table 2.1. Classification of work safety culture

Lp.	Type of safety culture	General characteristics
1	Safety culture unit	Specifies individual beliefs and values on human health and life (units) and individual attitudes towards risk, accepted patterns of behavior and evaluation issued by the social environment.
2	Culture of enterprise security	It is characteristic for the majority of the company staff the state of awareness of the risks and functioning (formal and informal) norms of conduct against threats that affect consideration of the safety and health management.
3	Safety culture society	It reflects expressed by the public attitude to risk, the value attributed to health and life, accepted standards in emergency situations and ways of assessing people who take risks.

Source: own study based on R. Studenski, Safety culture in the company, in: Work Safety 9/2000

Culture of safety at work is a collection of psychological, social and organizational factors affecting the operation to protect the health and lives both at work and in private life[18]. By J. Ejdys[19], culture of safety within the organization is a set of technical rules, organizational and legal framework for the conduct of all employees conscious level of strategic, tactical and organizational maintain the required level of safety and health.

3. Culture of work safety in the construction industry

In the process of working man acts directly or indirectly on the objects of labor and technical measures in the areas of their impact are the sources of threats.

Work safety is therefore conditional upon the technical condition of the equipment used in the work process, adjusting the conditions of the working environment to human capabilities and attitudes which manifest employees to work safety issues.

Building production requires a certain space in which construction works are carried out. The necessary space is determined by the surface needed for the realization of the production process plus the security zone and the necessary height needed to do the job[20]. The popular image of the place of performance of construction output is the construction. Construction Law[21] does not clearly define the term "construction", but this term includes, in addition to reconstruction, reconstruction, extension, superstructure, installation, repair, demolition, to the works carried out in the performance of a building. In an environment of construction may appear to potential threats. They create them all elements of the work related directly or indirectly to the execution of works.

The threat is defined as a state of the working environment that could cause an accident or illness[22]. The threat is also a source or a situation that could potentially cause injury or illness, property damage, damage to the environment or a combination of the above. During the construction works there are many factors threatening the health and / or life of employees, that the man might be:

– dangerous – their actions may lead to an immediate deterioration of human health and may even contribute to his death,
– harmful – their impact may lead to disease in the employee,
– nuisance – their impact on the employee does not lead to permanent deterioration of his health, but it can cause discomfort or excessive fatigue of the worker.

These factors can be located in different places of construction or due to the installation situation, e.g.:

– can be located in the structure, equipment buildings and work premises,
– may result from the techniques used in the processes, tools and devices.
– they are the result of work organization,
– can come from employees and insufficient knowledge of the requirements of health and safety.

Also note that depending on the level of impact or other conditions disruptive factor can be a factor in harmful and dangerous irritant factor. Factors of occupational hazards can be divided into four basic groups: physical, chemical, biological factors, factors psychophysical[23],[24]. In the case of factors harmful, disruptive or dangerous workplaces employer is obliged to inform employees of the occupational risks associated to the work performed and on the rules of protection against threats. It is also obliged to take measures to prevent occupational diseases. Set of factors constituting a threat to the life and health of construction workers are shown in figure 3.1.

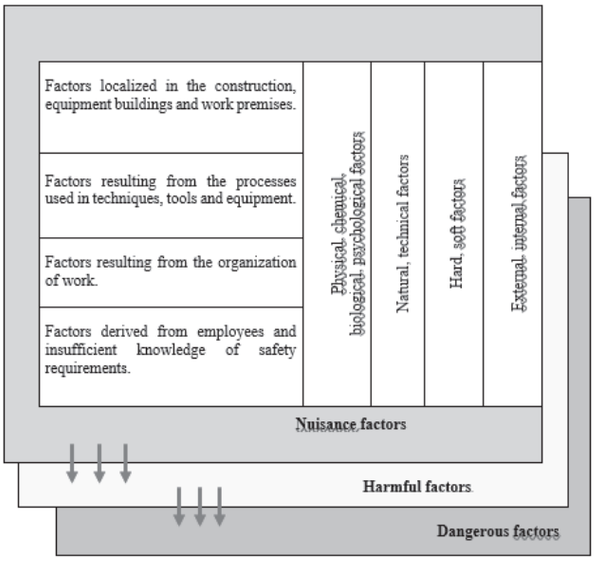

Fig. 3.1. Set of factors constituting a threat to the life and health of the worker house.
Source: own

Treating the construction as an organization, and assuming that the culture of safety is part of the culture of the organization (construction) you can say that a culture of safety and health in the construction industry form the elements of the culture of individuals, companies and society (Fig.3.2).

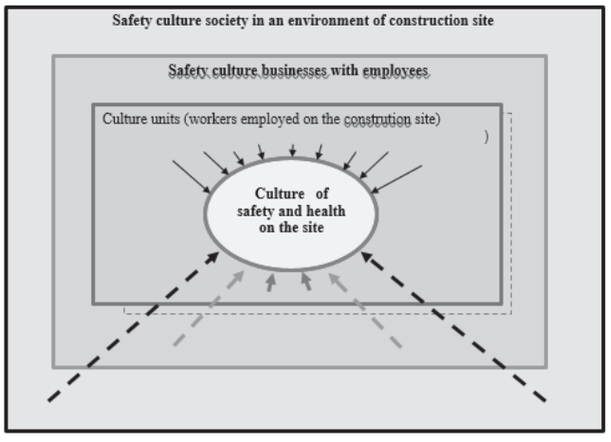

Fig. 3.2. Culture of safety and health on the construction site
Source: own

4. Summary

Culture of safety as a component of culture construction is the result of individual and group values, attitudes, perceptions, competencies and patterns of behavior and style and quality in the field of safety and health on the site. The biggest influence on the shaping and sustaining a culture of safety in the construction industry are:

– standards and rules for dealing with risks that determine when the risk is significant and requires an appropriate response and when you can skip or ignore,
– attitudes relating to the beliefs associated with the importance of health and safety,
– "reflexivity" related to occupational health and safety involving the ability to draw conclusions on the action taken and mindfulness enable appropriate responses to emerging new and previously unknown threats.

It should be remembered that every building, regarded as an organization does not exist in a vacuum, but in the concrete reality in which it is implemented. This reality affects the culture of safety and health on the site. Analyzing the most important factors influencing the culture of the organization[25] can determine the elements influencing the culture of construction in the area of occupational safety and health such as:

– features of construction management and construction workers – each participant works brings their own experiences, perceptions, "private" standards, points of view and imposes thus certain styles of behavior that may affect the treatment by other health and safety on construction sites,
– types of enterprises engaged in construction work – depending on the age, history and size of the company will depend on the culture of the organization. For old organization typical features will ritualism and conservatism, young people and will be assigned to innovation and focus on modernity,
– type of construction site – depending on the type of work, the technology used and the organization of work will be required other material resources, other specialists, and other ways of doing work.
– the type of environment – enterprises in the construction of the current environment are with him in constant interaction. For construction workers affected by norms and values developed by the regional culture, state or local.

In any case, the basis for the desired culture of safety and health on the site should be high value attributed to health and life. Formation of such a culture requires taking into account all external and internal elements in the field of occupational safety and health protection, and create new attitudes and values with the participation of all the participants of construction.

The aim is to encourage em p loyees to eliminate excessive risks in the wor k place and procedure-oriented health and life.

Helpful in building a culture of safety and health on the site may be organizational practices[26]. They are indicated by experts as necessary for the effective formulation and maintenance of high culture of work safety and health protection. The basic include:

– management commitment construction – is to express the construction manager, foremen, masters and foremen personal interest and concern for the safety of workers; paying attention to health and safety when planning and implementing organizational changes, technological and personnel;
– improve interpersonal communication – is based on a reliable and systematic informing all construction workers, including subcontractors, the dangers, protective measures and undesirable situations occurring in the workplace; informing "on the job" in the processes of teaching, training and professional development through the establishment of social dialogue in this field;
– increase the participation of employees of construction – is to use the knowledge, abilities and experience of construction workers; encouraging them to present their opinions and suggestions regarding health and safety; engaging employees in the development of internal standards and documents in the field of security;
– analysis of accidents – is based on analyzing all of accidents and potential accident situations that have taken place on site or in the workplace and identify the causes and taking preventive measures;
– motivate and reinforce safe behaviors – is to express approval and recognition of construction workers, who act safely and engage in actions to improve safety on the construction site;

– increase cooperation – it is based on the interaction between the participants of the whole process of building and maintaining an atmosphere of understanding and trust between the leadership of the construction and management of subcontractors, and between employees of contractors carrying out work on the construction site; increasing cooperation with the State Labour Inspectorate, State Sanitary Inspection and other institutions dealing with the issues of health and safety;
– consideration in solving their own problems concerning the safety achievements of the EU – is based on analyzing solutions to member countries of the community and use them in your own business.

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