

PM APPLICATION IN LOCAL ADMINISTRATION DURING TERRAIN PREPARATION FOR CONSTRUCTION

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Abstract

This paper shows problems that most often occur during terrain preparation and equipment for construction in most of local units of Croatia. The emphasis is on problems of preparing and passing the spatial urban documentation, solving of proprietary-legal relationships and infrastructural terrain equipment. Certain solutions are proposed, based on application of knowledge and particular PM techniques in these segments of local administration. Their possible application has been demonstrated on a case study.

Key words: terrain preparation and equipment for construction, urban documentation, proprietary-legal relationships, infrastructure, project management, local administration.

1 Introduction

Adequate terrain administration is in general interest of the society, and it is also significant from viewpoint of clients who invest into construction. In most of the countries, particularly those in transition, investors wishing to invest into construction often face a series of difficulties and problems during the process of acquiring all required grants and construction permits. There is a series of preliminary actions which must be conducted according to valid laws, so it is essential that local managing authorities give their significant contribution to simplification of entire procedure through best possible organisation and application of new organisational and managerial knowledge and techniques, project management for instance, which is here recommended.

2 Regulation of construction terrain

According to the Urban Regulation Law, regulation of construction terrain encompasses:

- 1) terrain preparation for construction (making of urban plans, proprietary-legal actions and so on)
- 2) building of communal and telecommunication installations, buildings and devices for individual and public consumption.

3 Research subject

Following urban administration segments are emphasized as particularly important:

- 1) Urban planning

- 2) Proprietary-legal issues
- 3) Communal development of the terrain

Organisation of their execution should be viewed in the light of valid legal regulations. Within them, however, as simple and efficient solutions as possible should be searched for, because, among other things, a well-conducted terrain preparation for construction (completed urban documentation, built infrastructure, well-defined property rights and so on) has a positive impact on achievement of main goals of construction projects.

4 Existing conditions in the area of construction terrain regulation in Republic of Croatia

4.1 Existing conditions in the area of urban planning

The area of urban planning in Croatia is regulated by the Urban Regulation Law from 1994 which stipulates that urban planning secures administration, protection and management of space in republic of Croatia. According to that Law, urban planning comprises measures to realize urban planning system, as well as make and enforce urban planning documents.

Urban planning system in Croatia has been so structured that local administration units are main bearers of urban documentation making. They bring urban planning documents while expert base is provided by state administration bodies and administration bodies of local units, founded to conduct expert urban planning tasks. Those bodies are not equipped to make urban documentation and their task is coordination and supervision during making and bringing of the plan. The making itself is entrusted to companies registered for such activities. Research indicates that **significant problems in practice occur precisely in the segment of making of urban documentation**. As a matter of fact, relevant individuals in administrative bodies for urban planning see the main **problem in inadequate quality and training of project designers – urban planners**. Consequently, there are frequent cases of negligence present in the plan, which must later be corrected, often after repeated interventions by plan bearers. Sometimes it causes delays, but that problem is not particularly pronounced. On the other hand, project designers complain about **exaggerated and unnecessary limitations imposed by expert bodies, a sort of «conservatism»**, as it were, in regard with urban solutions.

Research showed that there were cases of **misuse** in the urban planning segment **regarding the change in designation of space in direct agreement between urban planners and leading people of towns and municipalities, without agreement by terrain owners**.

Administrative bodies must in the next two-year period have the program of measures to improve the condition in the space which represents the basic planning document to create urban documentation. Program of measures can also determine the need to regulate terrain, level of terrain regulation, sources of financing and the deadline to regulate the terrain for planned purpose. Reports on what has been accomplished in the expired two-year period are made with regard to the planned program of measures.

As for the financing of the planned documentation, it is financed from the budget, while detailed plan may be financed by the client on whose initiative the plan is made. According to the research, there is often the **problem of matching the interests of investor and local administration units in terms of planned activities. Precisely this has been pointed out as the main cause for possible delay in making of the plan.**

After the urban plan proposal has been made, the bearer must make sure that the public debate is conducted in which all interested parties have a right to participate.

4.2 Existing conditions in the area of proprietary-legal issues

According to the Expropriation Law which has been in force since 1994, real estate can be expropriated when it is necessary for construction of objects of interest for Republic of Croatia and the decision on that is brought by the Government, on the strength of opinion of County Parliament. This law regulates the expropriation procedure, as well. Compensation for the expropriated real estate is defined, as a rule, as a grant to another real estate, but if the owner of the expropriated real estate does not accept the real estate offered to him, then the compensation is given as money in the real estate market value. If the interest of the Republic is not ascertained, the real estate cannot be expropriated, and potential investor must settle the issue of terrain sale and its price with its owner. Proprietary-legal issues are analyzed as early as in urban documentation phase, with a goal to check the readiness of owners to sell the terrain sale, and to estimate financial means required for purchase, but they are not solved completely yet. **Impossibility to settle the sale issue with terrain owners may significantly make the preparation phase more difficult and prolong it.**

4.3 Existing conditions in the area of communal development of the terrain

Main operative subject in the area of communal development of the terrain is the constituting unit for plan and development in town administration department for the communal system. It is in charge of planning and construction of big traffic and infrastructure objects, and the means for it are secured from communal contribution which investors pay after receiving the construction permit. The level of traffic and communal infrastructure development is defined by detailed urban regulation plan. Infrastructure development dynamics corresponds to construction dynamics of given undertaking.

4.4 The most significant problems in the area of construction terrain regulation

Research conducted pointed at following most significant problems in the area of construction terrain regulation:

- 1) **Inadequate quality and training of project designers – urban planners**
- 2) **Problems of bringing into agreement planned solutions and demands of expert offices at local administration units**
- 3) **Problems of matching the interests of investors and local administration units in terms of planned activities in the area. This is one of the main reasons of failure**

to meet the deadline of plan completion. Sometimes there are cases of authority misuse by leading people, i.e. of bypassing the terrain owners during process of change in designation of space

4) Difficulties of settling the sale issues with terrain owners. Significant extension of preparation phase is possible.

5) Protracted plan making.

6) Disagreement between cadastre and land registry data prolongs preparation time.

7) Inadequate work coordination and connection between offices on different parts of urban regulation.

5 Improvement proposals in the area of construction terrain regulation by application of PM - techniques

5.1 Introductory analysis

Some of the registered problems in the area of construction terrain regulation imply an essential shortcoming, which is no or insufficient connection between particular segments and factors and lack of coordination. It is safe to believe that significant improvements could be achieved through organisation on project principles and application of particular PM knowledge and skills. Certain organisational requirements are necessary, but position of particular subjects in the area of terrain preparation and equipment is determined by legal provisions, and although in fact they are dislocated, belonging to different offices and administrative units, in reality, in order to ensure quality and efficiency, the connection and coordination of their function must be secured.

Essential factors in the area of construction terrain regulation are:

- office for urban regulation, environmental protection, civil engineering and proprietary-legal affairs – this is a state administration body, in a way, figuratively, a "branch office" of the Ministry for environmental protection, urban regulation and civil engineering
- department conducting urban regulation tasks at the county level
- municipal department for urban regulation tasks and terrain management
- department for communal activities and terrain management at the county level
- municipal department for communal activities
- cadastre and land registry
- companies registered for project designing in the area of civil engineering and urban regulation
- municipal communal organisations

Existing services operate separately with weaker function connections, except in case of creation of urban plans at the county and town level, as well as urban planning, proprietary-legal preparation and communal development of the terrain at the municipal level where those connections are somewhat stronger. Besides, research has shown that there is no clear mutual perception and understanding of scope of activities among factors, even those at town and county level.

The most interesting, operative level of construction terrain regulation is precisely the municipal level where particular segments of regulation of construction terrain are carried out in two organisational units, i.e. department for urban planning and proprietary-legal preparation and department for communal equipment of terrain. The basic idea behind it is that precisely at this level, through application of PM knowledge and techniques, a quality shift may be achieved in the domain of construction terrain regulation.

5.2 Phases of establishing the design model of construction terrain regulation

The intention is that the project of modernization and quality increase of construction terrain regulation, i.e. introduction of design model of construction terrain regulation, is achieved in five phases as shown on figure 1:

1. Concept of the model (CONC)

Preliminary concept of the model is set up. During the concept set-up, outlined goals and noted shortcomings are taken into account. The concept is set up by hired outer consultants in close cooperation with factors within the system.

Result of this phase is the approved **concept of the model**.

2. Organisational-technological preparation - (OTP)

Organisational-technological preparation implies providing necessary conditions for PM application when it comes to organisation, necessary staff and means.

At very beginning, a problem arises here, and that is a shortage of educated personnel which was beyond any doubt demonstrated by research. Accordingly, before any further activities, an adequate education of personnel is required through courses and in part with assistance of hired outer consultants already mentioned.

This phase must result in the following:

1. achievement of organisational requirements for model application (organisational scheme)
2. adequate PM education of personnel
3. sufficient equipment with computers and software, i.e. **securing conditions for model application**.

3. Model application and assessment on test project (TEST)

Once organisational and technological requirements are met, model may be tested on a test project which should be of medium level difficulty and complexity. It is essential to establish clear model assessment criteria. For instance, clear indicators are regulation time and cost for particular zone of undertaking through application of new model, compared to similar operations organised the old way. Continuous model application control should be provided within the system, along with the assistance of consultants as well as their cooperation.

Second phase result is **approved concept of model improvement**.

4. Model introduction (MOD)

After the test period and observation of shortcomings, improved model is introduced. Improvements can be in regard with concept itself, as well as organisational and technological requirements. Continuous control of model application results is necessary, as well as occasional consultations with outer consultants, according to needs.

This phase must have a defined deadline. After it has expired, results indicating necessary model corrections are analyzed. Of course, some deficiencies will be corrected even earlier, "along the way".

Result of this phase should be **approved model correction**.

5. Model correction (COR)

This and previous phase are partly intertwined. This phase must result in **defined model** which will be applied in practice.

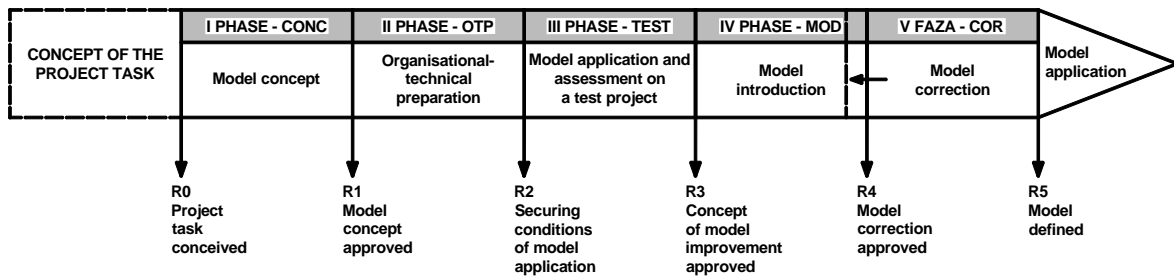


Figure 1. Phases of establishing the design model of construction terrain regulation

5.3 Characteristics of design model of construction terrain regulation

Construction terrain regulation for certain planned undertaking may be regarded as a design type work and organised and conducted according to PM principles. Two cases must be discerned in doing so:

1. a case when the zone of undertaking encompasses municipal terrain only
2. a case when the zone of undertaking encompasses mixed private and municipal or only private terrain, so terms must be settled with private owners.

Only second case will be explained here as it is more complicated and usually of a lot longer duration, compared to the first one

So, the primary goal of consideration is to determine a proposal of construction terrain regulation model which will be based on design principles. Indeed, regulation of construction terrain is a process with all design characteristics, but it is not organised in

such way in reality, due to either unfamiliarity with or poor knowledge of PM on the part of participants, as well as due to inertness of bureaucracy apparatus and unwillingness to introduce more significant changes, something that has been noted in some circles.

In case construction terrain regulation is treated as a design, following groups of activities can be defined:

1. Initiating creation of an adequate urban plan

Local administration unit and interested investors can start the initiative. Interested clients are obliged to finance the plan creation.

2. Actions preceding the plan creation

Examination of coordination between planned contents with higher-order plans, possibility and price of terrain purchase.

3. Creation and passing of the plan

Plan creation bearer is under any circumstances local administration unit, but plan creation itself is entrusted to a registered company. An outstanding problem is to coordinate interests of wider community, investors and plot owners.

4. Actions preceding the construction terrain development

Infrastructural construction terrain development level is defined by detailed urban plan (DPU), whereas development itself is financed by communal tax.

5. Construction terrain development

This is basically a development project, conducted by a local administration unit through adequate expert service, which invites tenders to choose the contractor.

As seen in figure 1, existing situation is characterised by disparity of departments and services working on terrain regulation. There are functional connections, but not clearly defined, and major problem is non-existence of a team or service to coordinate the work of them all. Therefore in reality, terrain regulation does not unfold as a continuous design process, but rather each service does its job partially. This way is not rational because it is time consuming and creates higher costs, and often negatively affects project quality, either in its entirety or in some parts. Higher costs are created for several reasons, i.e. lengthy work, incoordination of work between various services, poor time planning etc. Analysis indicates that there is a need for a common factor, best as a project team and work organisation on project principles. Figure 3 shows a proposal for organisation scheme of participants in terrain regulation where, compared to present situation, two cohesive factors are introduced, conducting of terrain regulation and PM department. Accordingly, a solution is chosen that will retain existing organisational structure of terrain regulation with three departments, specialised in proprietary-legal

preparation, urban planning and development of the terrain, but they are now united within common management. Furthermore, forming of PM department is proposed, out of tested, licenced PM experts and PM educated staff from all quoted departments. They will form project teams which will organise and lead terrain regulation projects. Making of projects will be carried out by segments (subprojects) in existing departments. In case of conflict of authorities between management of Department for regulation and project leader, final decision lies with project leader.

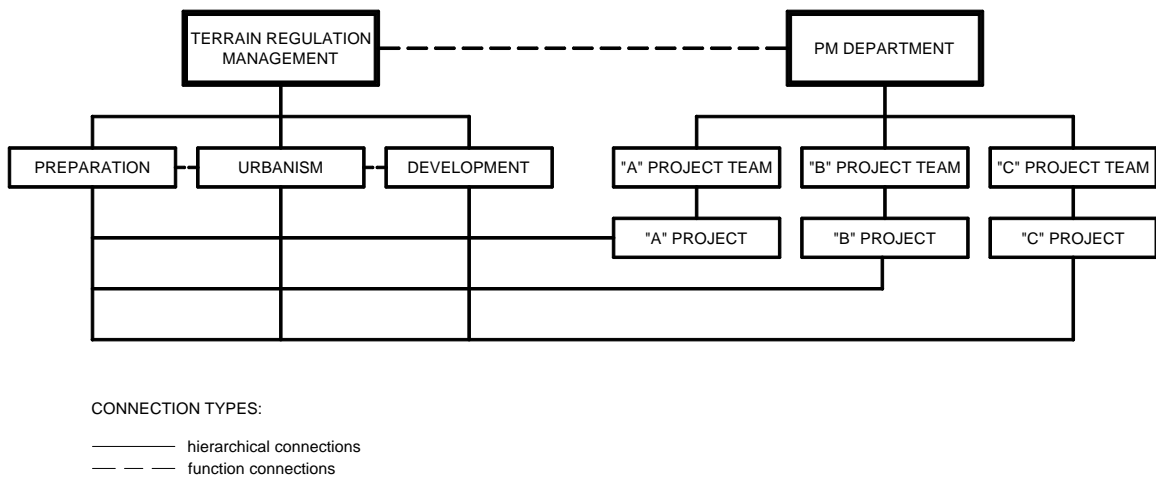


Figure 3. Proposal for organisation scheme of participants in terrain regulation according to project model

Given proposal does not radically alter an existing organisational structure, which makes it a realistically achievable option within a relatively short time, with an earlier observation of requisite PM education of personnel, computer equipment and adequate software to conduct projects.

6 Example of «K» zone terrain regulation – comparison between existing and proposed models

«K» zone is a construction area in a small municipality in vicinity of Rijeka, Croatia. Urban plan existed for that area and according to it the zone is earmarked for residential development. Municipal expert service established that there was an interest to invest into the zone in terms of varied commercial development. It was possible to achieve through a change of urban plan, terrain purchase from private terrain owners and creation of a detailed development plan brought into accord with the urban plan. Entire preparation and planning process was riddled with a whole series of inconsistencies and irregularities. It has been going on for two years now and there is no end to it in sight. Majority of problems was created due to lack of coordination, but also due to attempts to avoid the procedure as specified by law. Problem was that the private plot owners did not agree to the change of assignment from residential to commercial development and sale. The final result is that change of assignment from residential to commercial development zone went through without owners' agreement, but with agreement of leading people in the municipality, which initiated a series of appeals of owners that suffered damage. Entire process came to a stall due to a series of court disputes.

The project team role would have been manifested from the very beginning, ever since the interest to invest into the zone was established. On one hand, so that the interests of private plot owners in terms of change of assignment and plot sale, as well as the size of demanded compensation would be investigated, which would be included in total project costs. On the other hand, it would stop illegal change from residential to business zone without consent of plot owners. Preliminary analysis of proprietary-legal relationships and cost estimate should have been conducted by Department for Preparation, and only after the agreements for change of assignment of terrain had been obtained, urban plan change could have been carried out, and consequently all other preliminary activities with creation of a detailed development plan. That would have been done by Department for Urban Planning which would have hired an appropriate project firm. However, all these works would have been organised and lead by an appointed project team. After the urban documentation, i.e. changes of urban and later detailed plan would have been adopted, project team would have organised and led activities in regard with terrain development in terms of communal and traffic infrastructure, up to the level determined by detailed urban regulation plan and in such a way as any other construction project is conducted.

Project team has a special role in matching the interests of interested investors with interests of wider social community, i.e. local administration unit. Those interests are often in conflict for on one hand there is an interest of profit and on the other an ecological, aesthetical or some other interest. This is where the role and quality of project team particularly become prominent, in addition to its standard role of being in step with the project in terms of time frame and costs.

7 Summary

Investigation of construction terrain regulation system has revealed that existing services act separately with weak functional connections, with an exception of creation of urban plans at county and town level, and urban planning, proprietary-legal preparation and communal development of the terrain at the municipal level where those connections are somewhat stronger. Besides, there is no clear mutual perception and understanding of scope of activities among factors, even those at town and county level. Therefore the introduction of project model of terrain regulation is proposed where three existing departments would be retained and a common department superior to them is leading terrain regulation activities. PM department is introduced where project teams are formed to lead projects with the most crucial role for project success.

Given proposal does not radically alter existing organisational structure, which makes it a realistically achievable option within a relatively short time, with an earlier observation of requisite PM education of personnel, computer equipment and adequate software to conduct projects.

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