

From Brownfields and Greenfields to Multi-fields

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Abstract. The terms “brown fields” and “green fields” appeared in Western Europe some years ago, when planners were looking for opportunities to manage vital urban areas in more efficient ways. There is no doubt that new urban needs will continue to demand new accommodating spaces.

The present paper aims to show that urban configurations offer additional fields like grey-fields, orange, underground, sky, bank, donor, energy, time-fields etc which designers and decision makers, have to be aware of, in order to contribute effectively to the regeneration and vitalization of our cities.

Keywords: grey-fields, orange-fields, water-fields and time-fields

INTRODUCTION

The terms “brown fields” and “green fields” appeared in Western Europe about 15-20 years ago, when planners were looking for opportunities to manage vital urban areas in more efficient ways. The need to vitalize our towns and to satisfy new urban needs demands etc will never stop. New needs imply new spaces and new management tools. The present paper aims to show that urban configurations offer a lot of obvious or hidden opportunities, which planners, architects, decision makers etc have to be aware of, in order to contribute effectively to the regeneration and vitalization of our cities.

BROWN FIELDS AND GREEN FIELDS

The brown fields concern abandoned old industrial areas and premises (Fig.1) and the green fields (Fig.2) concern mainly agricultural fields used in the past as cultivation areas which could, (under certain preconditions concerning infrastructure, type of development, etc) accommodate vital urban uses [1] [2] [3]. The general public is more familiar with the term “brown field” in a sense that it comes very often across articles describing the reuse of old abandon industrial premises for the rehabilitation of cultural activities (e.g. the old Gas-village in Athens).

SQUARE ONE

Speaking about land management one has to turn back to square one and set basic questions that may facilitate the analysis of our topic.

These sorts of questions may include the following:

- does land management concern only the existing land?
- which is the characteristic that differentiate a place from a space?
- which are the development limits of private land (Fig.3, Fig.4)?
- what is the point of naming, specifying or categorizing new sort of fields?

The answers to these questions may lead to answers like: “no”, “life”, “it depends on the respective statutory provisions”, “new management potential”, respectively. The present paper aims to clarify some of the above.



Fig.1. Brown field in San Francisco, USA



Fig.2. Green fields along Han River, China

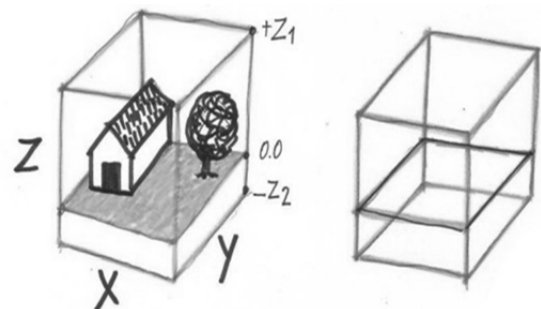


Fig.3. The rational limits of a piece of land

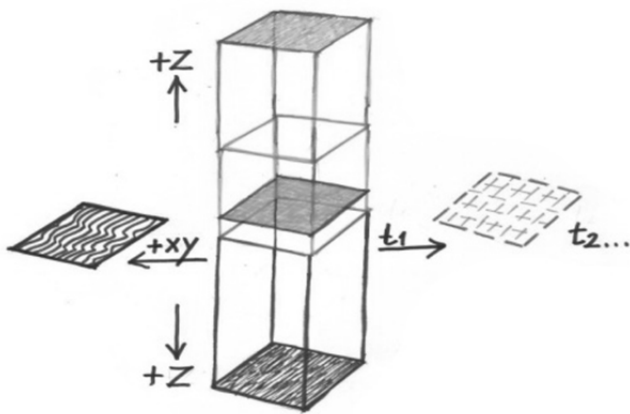


Fig.4. The extended limits of a piece of land

SEARCHING FOR NEW FIELDS

Looking for other vital urban spaces, it was quite reasonable to search for additional obvious or hidden opportunities offered within the urban limits [4],[5]. In Figure 5 one may see the topology of sky fields and underground fields that surrounds the development limits of private land on ground level. According to the provisions of Land and Surveys laws of Cyprus Republic, the above ownership includes the land surface, the area above and the area under (excluding the minerals which are regarded as national assets).

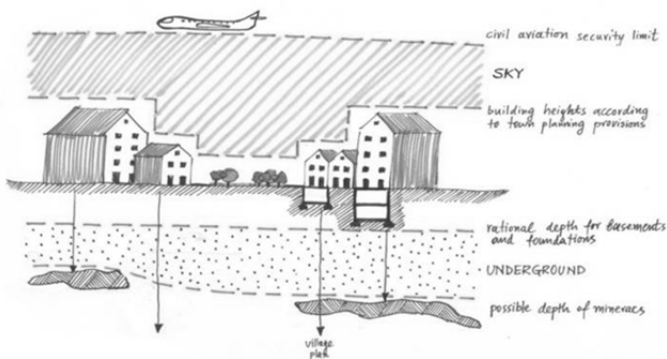


Fig. 5. Topology of fields surrounding the development limits of private land.

From my point of view any town offers, at least another twelve opportunity places or spaces, which should be treated and managed in various ways. These are: the real green fields (that is green public spaces, quite different from traditional "green fields", which can be better described as "vacant" fields), grey fields, government, community, water, orange, underground, sky, bank, donor, energy and time fields. Let us see some of the new fields.

A. New or real "green fields"

The established term of "Green fields" actually concerns vacant land that has never been developed or was formerly occupied by farms or low-density development that left the land free of environmental contamination. Greenfield sites are typically located in suburban or ex-urban areas (Fig.2). The

term was first used in Western Europe, so it was rational to be used, since most of this sort of land is really green all the year round.

Nowadays due to the climate change and the need to adopt a term that could be more relevant to international conditions, it is believed that a more appropriate term could be the "vacant field" which is commented below.

The term "green fields" can be used to characterize the real green urban areas, that are the places, which concern primarily the state or the private parks (Fig.6). Therefore, besides the basic functions which these places offered, (that is the active and passive recreation opportunities as well as the aesthetic and qualitative improvement of the urban space), it is obvious that these places can be also used for other purposes (like the provision of underground parking spaces, the arrangement of structures for the exploitation of renewable energy sources etc) without disturbing the achievement of their main task or the operation of their basic functions. It is well understood that in any case the legal status of these parks should be examined (especially in the case of private parks) in order to achieve a desirable multi-functionality of these places.

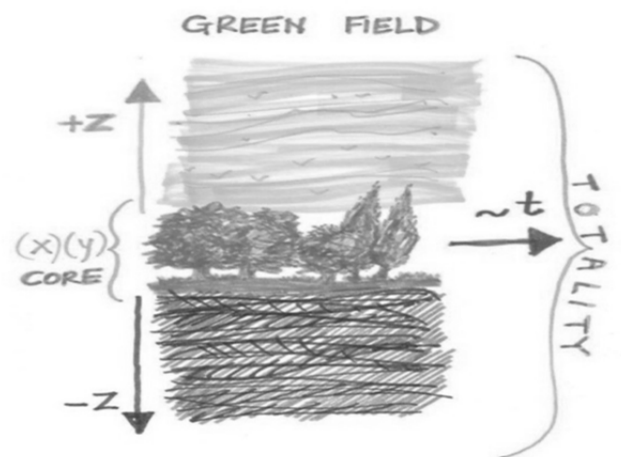


Fig. 6. A real green field



Fig. 7. Vacant fields 3-5 km from the central Nicosia

B. Vacant fields

The vacant fields concern undeveloped urban spaces, places or localities which could house important land uses. A vacant (or unused field) inside or outside the development area can accommodate various land uses, structures etc depending on the provisions of the respective Development Plan. The locality, access, size, price, building restrictions, and other characteristics specify to a great degree the development opportunities of any vacant field.

Figure 7 shows the vacant fields and plots 3-5 km from the central Nicosia capital of Cyprus. Some of them constitute the so called “opportunity sites” that is vital and unique fields which need to be treated with special design briefs, provisions etc.

C. Orange fields

The orange fields concern structures or plots of land, which accommodate functional, but not so efficient functions, activities or land uses. Due to their position in the urban fabric, they occupy some very vital or strategic spaces. The term orange field is correlated as a hue with brown field but is differentiated from it, in a sense that it represents something functional (and more vivid), which however approaches its sunset. Orange fields could offer additional opportunities for facing specific urban problems and could satisfy crucial demands or accommodate important urban uses. Thus it may be necessary to examine the possibility to acquire these areas through purchases, land swap or expropriations. This approach is based on the rational that is not always the best approach to expect the gradual decay of a central and vital immovable property, whereas is quite important to start to think for alternative land uses before the final desolation of the existing ones. In these cases appropriate SWOT, feasibility, viability, town planning and other studies can reveal that the social, commercial and other interests and benefits of the respective town, demand a much more dynamic intervention. Such interventions may include necessary land expropriations, an approach carried out in central Nicosia (Fig.8) in order to implement an extended redevelopment operation, which includes a new civic square, government buildings, a cultural complex and a new parliament (Fig.9).



Fig. 8. Orange fields (old stadium and surrounding buildings)

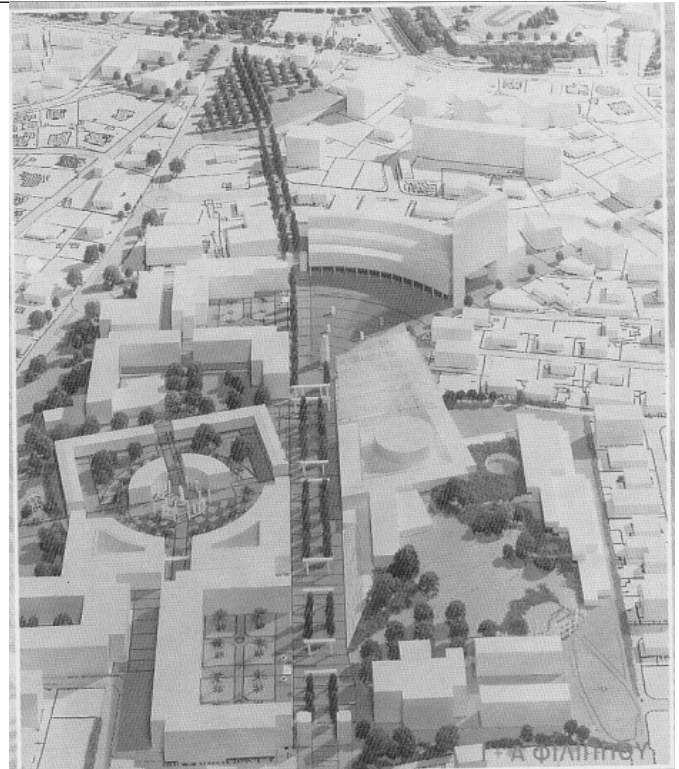


Fig.9. Redevelopment Plan of the area

D. Grey fields

The grey fields concern the public open urban spaces (besides the “real green fields”) which includes all the urban road network and circulation areas, like pathways, pedestrian routes, squares etc as well as old abandoned train lines or other road networks.

In this sense, grey fields (which got their name from the color of typical asphalt roads) cover a huge percentage of urban configurations as compared to other land uses. They constitute the biggest and continuous urban field, which is really unique.



Fig.10. Alternative re-management schemes of grey fields in Europe

The road networks are directly related to adjacent urban surfaces. This relation, which can be captured as a percentage compared to other land uses, varies a lot and may well exceed 25 or 30% of the respective total urban configuration (Fig.11). In the majority of typical European towns grey fields support the circulation of cars, which in many cases may act as nuisance against other important urban functions. Quite

frequently however, grey fields offer substantial re-management opportunities for the accommodation of environmentally friendly means of transport (like cycle routes and trams), pedestrian areas, linear green areas, sitting areas, public squares etc. (Fig.10).

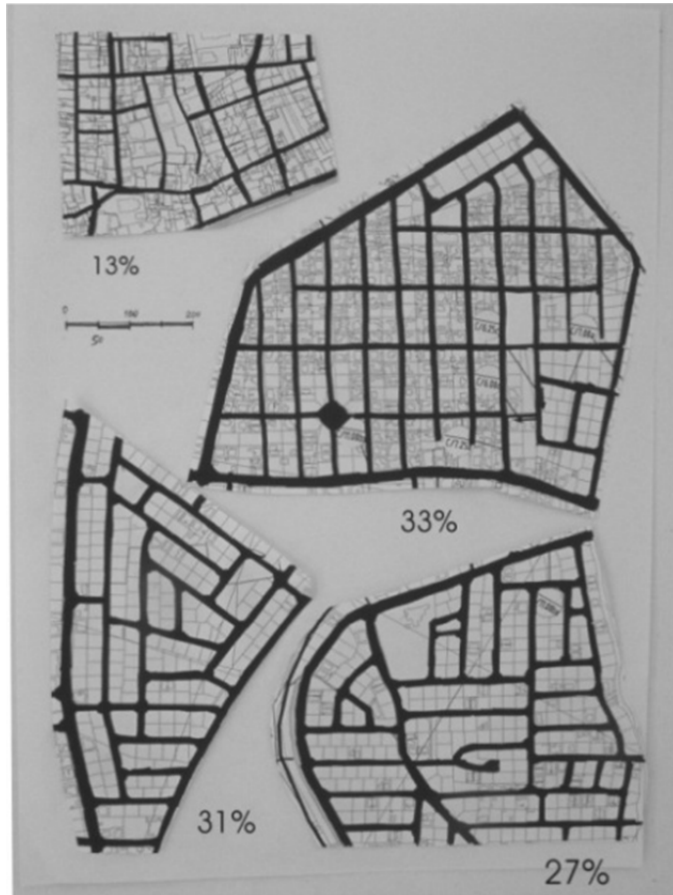


Fig.11. Proportions of typical grey fields

E. Government fields

The government fields concern all sorts of government land, which is belonged to the state. It mainly includes forestland, government land hired for agricultural or other purposes as well as unexploited government land.

Certain areas of Cyprus maintain a high percentage of government land. In Agia Napa municipality for instance (Fig.12) this percentage exceeds 25% of the total municipal area. This is the result of the acquisition of land as well as the use of land practice, applied during the Turkish occupation era (before 1878) as well as during the period from 1907- 1945 (English occupation) according to which any land used for 10-15 years for agricultural purposes could be registered as land property of the respective users. Therefore any land that could not be used for agriculture, like the rocky areas of Agia Napa, could not be declared as such and so it was registered as state land.

There is no doubt that a proper land management by the competent Land and Surveys Department should focus on the increase the state revenues. The first and vital move that could

be done concerns the systematic concentration of government land in compact and homogeneous areas. It is obvious that such an approach will not only increase the value of government land, but it will also have a positive impact in savings for the state, due to transactions and swaps between government and private land, according to the principle of equal values.



Fig. 12. Land ownership in Agia Napa

The government land that exists in a given urban area offers a lot of opportunities and perspectives. Fortunately in the case of Agia Napa mentioned above (Fig.13) part of the government land was designated 25 years ago as a special town-planning zone (Aa1), which basically allows sport fields and necessary, supporting facilities. As a result a new sports center with 16 football fields was constructed. The center contributes tremendously as an important source of revenue for the area.

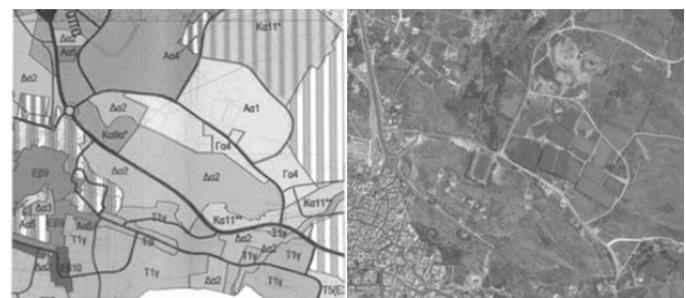


Fig.13. Town planning zones and actual playing fields

Nonetheless, a typical land management mistreat could be mentioned here. In many cases the government land is used for housing important land uses, without examining whether the specific locality is definitely the optimum one. A better methodology would demand first to examine whether the specific place is really the optimum one and in cases where this is not the case, then a better private land could be expropriated and the inappropriate government land could be

offered for land swap (on an equal price principle) as a compensation.

F. Municipal fields

The municipal fields (Fig.14) concern municipal, state or other land, which is run by Local Authorities. It can be distinguished from the government land because in many cases the interests or benefits of the Local Authorities do not always coincide with the broader public interest of the government. The municipal land can be increased: 1. through donations or concessions from the government or other bodies 2. through purchases or expropriations carried out by the community and 3. through the enforcement of protection zones (Fig.15) or special terms in respective planning permits, according to which certain land proportions should be confiscated for the creation of public amenities, green areas etc. At the end of the day all these places will be run according to the statutory legislation by the Local Authorities.



Fig.14. Open space in central Nicosia



Fig. 15. Protection zone Da2

G. Water fields

The water fields concern parts of the coastal areas, rivers etc which have been reclaimed and converted into vital urban fringes. In order to proceed with such investments nowadays, one has to take into account among other parameters, the sea level rising phenomenon, the possible tsunami risk of the specific area of the globe etc. Even though, water fields adjacent to central civic areas (Fig.16) offer tremendous opportunities for drastic city transformations (Fig. 17).



Fig. 16. Coastal front in Limassol town, during 60's.



Fig.17. Water field reclaimed in 90's

H. Sky fields

The sky fields concern the ambient space, which lies between the urban building skyline and the navigation airfields (Fig.5). Today this space is not used, but the continuous increase of urban demands (e.g. for renewable

energy etc.) may lead to the examination of the possibilities to exploit this space, for structures, which can accommodate e.g. photovoltaic panels etc. (Fig. 18). In Figure 19 one may see the dual use of large solar panels, firstly for the creation of a protected car parking area and secondly for setting up a recharge energy area for electric cars. In the sketches of Figure 20 one may see a possible netting of the sky fields above the road network for the exploitation of solar energy. The relevant structure contributes also to the increase of shaded areas and therefore to the improvement of the environmental conditions and the overall circulation conditions especially for pedestrians, something which is very desirable for areas where the intensity of the sunshine is high (Fig. 21).



Fig.19. Proposed sky field in Spain



Fig.18. Photovoltaic tree in Styria, Austria

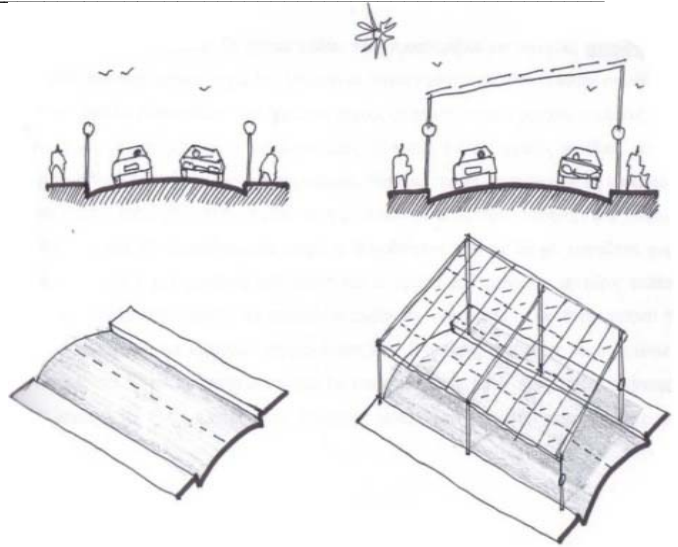


Fig.20. Sky fields over roads

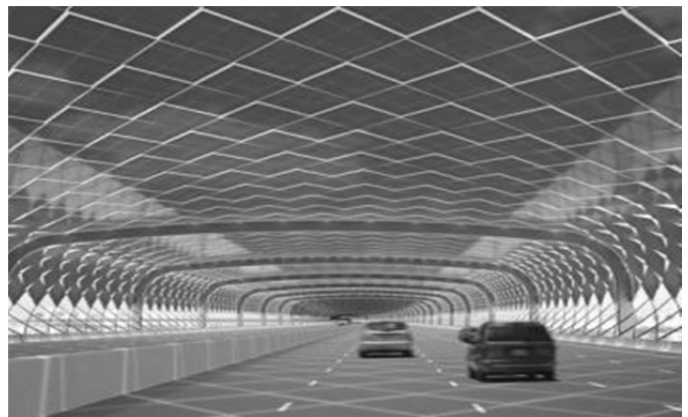


Fig.21. Proposal by Architect Mans Tham

I. Underground fields

The underground fields highlight another big potential. We are speaking of course about the underground space below the cities which can be used for road tunnels, multistory parking places (Fig.22) (as was applied for instance with great success in Madrid and Paris), electricity substations, premises for the exploitation of geothermic energy etc. but possibly for other additional uses like commercial in relation to similar uses at ground level. Therefore, besides the constitutional provisions according to which all the minerals (regardless their depth) belong to the state, is necessary to fix the rational limits (Fig.5) within which the landowners can exercise their development rights (e.g for the construction of private underground multistory parking). By doing so, the state will safeguard for the near or far future a lot of opportunities that will allow the construction of important infrastructures (like subways) if and when are needed.



Fig. 22. Planned or existing underground fields in Germany

J. Energy fields

Energy fields refer to urban fields which are used for the production of energy by exploiting renewable energy sources (RES) like photovoltaic, geothermal etc installations, which are regarded as environmentally friendly and can be easily accommodated within the civic environment. To this extent the energy fields may exclusively be used for the production of energy or may well be combined with other fields mentioned in this paper (like sky-fields or green fields for instance).

K. Donor fields

Donor fields concern fields that need to be remained undeveloped and protected from substantial development, either because they are hosting vital environmental, historic or cultural items or because it was decided by the competent authorities to remain as public open spaces, parks, squares etc.

In an effort to achieve the above objective and keep the state budgets as low as possible, many countries have established the mechanism of transferring development rights.

A similar mechanism is successfully applied the last 20 years in Cyprus for the protection of listed buildings. Now a new law is under way in order to facilitate the protection of other urban uses.

The owner of a donor field will be given the optional right (in addition to money compensation, or land swap) to transfer or sell to other plots (receiving plots) part or all of the real (or artificial) development rights that are attributed to his plot (Fig.23), provided that the specific donor plot will be registered as state land, which will be preserved for the public interest as public open space or as private land with no development rights.

The transfer of development rights will be carried out by the use of a formula like the following:

Donor AREA x donor LAND VALUE = (a) x (receiving AREA x receiving LAND VALUE)

a = transformation coefficient

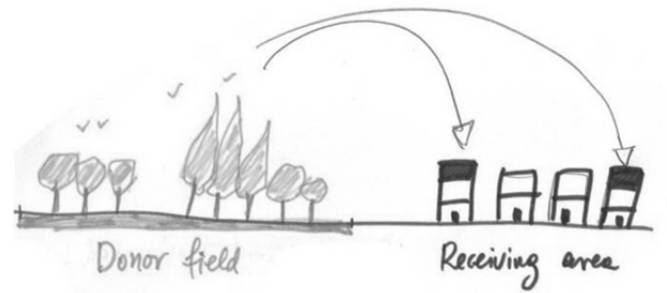


Fig.23. Donor field (e.g. a field in Natura 2000 network) and receiving area

L. Bank fields

The bank fields concern plots of land, which are spared (or confiscated) as government or municipal land through: a. transfer of development rights and b. through statutory or voluntary urban land consolidation of urban areas. The second method requires an area of some size (Fig. 24), which can offer land savings due to economies of scale. In doing so, the state can impose several conditions in order to facilitate the urban land consolidation that is the reallocation of land parcels and the formation of new building plots ready for development (Fig. 25).

According to these, it is possible, for instance, to safeguard the necessary land for public schools or big plots for integrated social housing, green areas etc. without charging the land owners involved in the project, with more than the typical confiscations, concerning land and money contributions for the infrastructure.



Fig. 24. Acquisition of land before land consolidation



Fig. 25. New proposed acquisition of land

M. Time fields

Time fields, refer to time sharing fields that can be used for certain periods of a day, week or year for accommodating temporary uses and activities different from the typical and usual land uses. They may concern any field analyzed above, but also any other private or public place, which can be utilized (according to specific terms and conditions) for certain time periods for the accommodation of urban uses others than the typical. A classical example concerns the temporary designation of circulation roads as car free areas for a specific time period and their conversion into temporary commercial-pedestrian areas (Fig.26). Another example may concern the use of a space, which is used during mornings as a parking area and during evenings (when the employees of the respective premises have gone), as a playing field (Fig. 27).



Fig. 26. Typical time fields in Athens. Selected streets are turned into open markets



Fig.27. Time field in Aglandjia external clinics in Nicosia. The parking space is turned into an athletic field.

VI. CONCLUSIONS

1. The lack of appropriate urban land reserves (as far as price, size, access, locality etc are concerned) guided us to rethink the real dimensions of land. It is believed that the observations above are seismological and terminological valid and that they promote further communication, extent the limits of land management potential and sustain an improved theoretical background.

2. By acknowledging all the above fields which may be offered in each urban area, one has to search in more detail the sort of policies, incentives, methodologies etc that should be employed in order to stimulate the interest of the public and private sector or public-private join ventures. It is more than evident that all sorts of fields need their own treatment which may be specific in each case and which may vary from country to country. The combination of the terms and preconditions related to the above 14 fields may give rise to the formation of tens of different combined policies.

3. Based on all the above it seems that town planning configurations offer many opportunities which are founded on the exploitation of the following fourteen places, spaces or fields, that is : brown fields, vacant fields, green fields, grey, government, municipal, water, orange, underground, sky, bank, donor, energy and time fields.

It can be stated therefore that when competent authorities or key stake holders face a specific town planning problem or strive to improve, renovate and vitalize an urban area, they could investigate and exploit any field opportunity offered in the relevant locality, which can help to formulate the various alternative intervention scenarios.

It is believed that the colourful fields described above, formulate a sort of a "multi-field model" (as compared to the existing two-field model which comprises the brown-fields and green-fields) and set a new but interesting spatial domain, which remains open for future research.

VII. REFERENCES

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George Hadžimikaels. No degradētām un zaļām līdz daudzfunkcionālām teritorijām.

Definīcijas "degradētie lauki" un "zaļie lauki" parādījās Rietumeiropā apmēram pirms 15-20 gadiem, kad plānotāji meklēja iespējas ar efektīvākiem veidiem pārvaldīt pilsētu teritorijās. Nepieciešamība pēc teritorijām, lai apmierinātu augošo pilsētu vajadzības, nākotnē turpinās pieaugt. Jaunām vajadzībām būs nepieciešamas jaunas telpas un jauni pārvaldības instrumenti. Raksta mērķis ir parādīt, ka pilsētas konfigurācija var piedāvāt daudz citu acīm redzamas vai paslēptas iespējas, kas ir savukārt saistītas ar citām pilsētas attīstības jomām. Darbs balstās uz sistemātiskiem novērojumiem un dokumentāciju analīzi no dažādām Eiropas pilsētām, nosakot pamata jautājumus, piemēram, vai zemes pārvaldība attiecas tikai uz esošās zemes statusu, vai tās attīstība ir ierobežota ar privātās teritorijās attīstību?

Nemot vērā piedāvāto sistematizāciju, tika noteikti vismaz 14 jauni pilsētas teritorijas veidi. Līdztekus zināmām degradētām un zaļām teritorijām ir definēti sekojoši 13 jauni veidi: 1/ Jaunie zaļie (attiecas uz publisku zaļo zonu), 2/ Oranžie (saistīts ar neefektīvu ēku izmantošanu) 3/ Pelēkie (saistīts ar aprītes jomu) 4/ Valdības (zemes, kas pieder valstij) 5/ Municipālie (zeme, kas pieder pašvaldībām) 6/ Ūdens (attiecas uz visu veidu ūdens teritorijām) 7/ Debess (attiecas uz teritorijām starp pilsētas panorāmu un lidlaukiem) 8/ Pazemes (attiecas uz pazemes teritorijām) 9/ Enerģētikas (izmanto atjaunojamās enerģijas vajadzībām) 10/ Donoru (Teritorija, kas saistīta ar iespējamo transformāciju) 11/ Banka (valsts zeme, kas iegūta no pilsētas konsolidācijas ceļā) 12/ Periodiskie (saistīts ar izmantošanu dažādos laikos u termiņos). Var secināt, ka pilsētas jaunā konfigurācija piedāvā daudzas iespējas, ko arhitektiem, plānotājiem un lēmumu pieņēmējiem ir jāapzinās, lai efektīvi veicinātu mūsu pilsētu reģenerāciju un atdzīvināšanu.

Георге Хаджимикаэль. От зеленых и деградированных к многофункциональным территориям.

Термины "деградированные территории" и "зеленые территории" появились в Западной Европе около 15-20 лет назад, когда планировщики искали возможности и способы для более эффективного управления жизненно важными городскими районами. Необходимость удовлетворения новых городских нужд со временем будет продолжать расти. Новые потребности подразумевают новые пространства и новые инструменты управления. Настоящая работа имеет целью показать, что городские конфигурации предлагают много других очевидных или скрытых возможностей, которые коррелируются с возможностями в других областях. Работа основана на сравнительном анализе территорий с помощью постановки нескольких базовых вопросов, например, 1/ связана ли политика землепользования только с существующим состоянием территории или является результатом ограничивающего влияния развития частных земель? И 2/ какой смысл вкладывается в наименование и категоризацию новых видов полей? Дополнительно, в работе были использованы систематических наблюдения и документация различных европейских городов. С точки зрения предлагаемой систематизации, городская конфигурация может быть представлена не менее чем 14 различными типами «полей». Помимо типичных коричневых полей и типичных зеленых полей (которые в настоящее время переименованы в пустые поля) было определено 13 новых «полей»: 1/ Новые зеленые (общественные зеленые зоны) 2/ Оранжевые (связанные с неэффективным использованием зданий) 3/ Серые (связанные с циркуляцией области) 4/ Государственные (земли, которые принадлежат государству) 5/ Муниципальные (земли, которые принадлежат местным властям) 6/ Водные (касаются всех видов акваторий) 7/ Небесные (связанные с окружающим пространством между городским горизонтом и навигацией аэродромов) 8/ Подземные (связанные с помещениями ниже уровня поверхности земли) 9/ Энергетические (используются для эксплуатации возобновляемых источников энергии) 10/ Доноры (связанные с возможной трансформацией территорий) 11/ Банки (государственные территории, полученные в результате консолидации городской земли) 12/ Временные (связаны с периодичным использованием территории). По результатам исследований был сделан вывод, что новые градостроительные конфигурации предлагают дополнительные возможности, которые архитекторы, планировщики и лица, принимающие решения, должны принимать во внимание и это может внести эффективный вклад в возрождение и активизацию наших городов.