

**CONTRIBUTION
FOR
TOWN PLANNING REQUALIFICATION**

RECOVERY OF URBAN ADDED VALUE

INDUSTRIAL PARK N°2

**XXV CONGRESS
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Author: **ENGINEER ENRIQUE GERARDO BOSCH**

Address: Pago Largo N° 292 Rosario

CP 2005 LVF – Argentina

Phone(+54)3414554869/5033292 /4472068/4408697

E-mail ing_ebosch@yahoo.com.ar

RÉSUMÉ

He was born in Rosario City, Argentina, obtained the Civil Engineer title at the National University of Rosario.

He holds the appraiser position since 1978 at the Municipality of Rosario. At the present time, he provides services in the Appraisal and Registry Department dependent of the Planning Secretary.

Since 1980 is technical representative of this office as Expert Control at the Provincial Court and the Federal Court.

He took, among others the "Improvement on Appraisal Course" lectured by the topographers Mario Scarano and Pedro Laitán (UNR 1994), the Municipal Procedure Course, lectured by Doctors Miguel Carrillo Bascary and Luís A. Dallacasa (Bar association 1995), and the courses given at the Professional Civil Engineering Council – Buenos Aires on "Management Through Critical Path Programming", lectured by the Engineer G. Murmis. (1995) and "Aspects of the expert work in the civil engineering", led by the Engineer Víctor E. Sirota.(1996).

He is member of the Argentine Appraisal Institute and the Appraisal Institute of South Santa Fe.

He was appointed Vice-president of the VII Argentine Congress on Appraisal developed in Rosario. (1996)

He is member by invitation since 1997 of the Appraisal Committee of the the Argentine Normalization and Certification Institute, participating in the production of its rules and being representative of this body in its presentation at national level in the IX Congress on Appraisal organized by the IAT (Appraisal Institute of Argentina) in Mendoza.(2000)

His works have been presented at national and international Congresses, Seminars and Conferences; he has published articles related to appraisal in magazines for professionals and lectured training and improvement courses.

In the independent development of his profession, he has carried out project and execution of civil engineering in Rosario and several towns in Santa Fe, Buenos Aires, Córdoba and Entre Ríos.

He is consultant on issues related to appraisal, legal problems due to construction and accidents, usually being party-appointed expert.

SUMMARY

This work describes the calculation of the contribution that a Zone developer should compensate for the usefulness that would obtain as consequence of the town planning requalification of the area where he suggests to carry out a project.

The growth of cities produces ongoing transformations, semi-urban and rural zones turn out to be urban and industrial areas.

The modification of town planning indicators, attribution of the town council, entails variations in the value of the earth, generating added value to the owners, profits that are not obtained due to the effort of the owners themselves.

The payment of contributions to the state originated due to this profitability is an element used in many Latin American countries and constitutes a new income source to the public treasury.

Most of American constitutions, with a strong predominance of defense of the private property, generate a serious problem in the acceptance of the payment of these contributions, especially in Argentina.

This work develops a methodology that allows to calculate in a technical way the value that an owner should pay due to the transformations produced in his land property, presenting an equation with total independence in relation to the cost that the enterprising should spend and relating the town planning requalification only with the urban capital that corresponds to the state.

This procedure had in the Housing Park Ludueña the first landmark of successful application managing the acceptance of the investor group that would develop the project and generating a change in the way of thinking of the developmentalists protected on the principles of the article 14 of the National Constitution.

The proposed challenge in this opportunity was given not only for the acceptance of the method but also for the great amount of plots involved in the project, with different owners, economic aspirations, different necessities and objectives to fulfill and besides with different terms of beginning and finalization.

At the present it is being studied the application of the methodology in the Master Plan of the Arroyo Ludueña, an area of 200 hectare whose requalification is being analyzed.

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INDUSTRIAL PARK N°2**

INTRODUCTION:

Rosario city receives in the year 1966, with the sanction of the regulation N° 33.337; the first indicators in relation to town planning in its territory.

There were included, besides the urban zoning, areas that allowed the setting up of industries and semi-rural exploitations where intense cultivation, especially of vegetables and legume, were developed to be used as provisioning for the city.

The natural growth of the city led to the saturation of spaces intended for industrial purposes and as a consequence to the increase in price of the few vacant plots meant for this use.

The regulation N° 6.492/97 modified the town planning classification of the land relocating uses and setting new levels of demand. The new industrial areas began to be taken up by the market and when generating economic policies for the reactivation of the country produced an excessive growth of the land price in the urban area and as a consequence in the industrial and rural zones.

This increase in the cost, favored by the laws of promotion of industrial parks, produced an exodus of industries to Rosario's satellite towns in search of a greater building expansion and less land cost.

This situation, if not controlled, could produce an important reduction in the municipal takings received through the Right of Registry and Inspection (Derecho de Registro e Inspección, DRel), so the executive began a study of the areas that could receive a requalification that would allow industrial uses.

The first experience was the Industrial Park N° 1, of short size in relation to earth demand, and which entails to the solution of a preexistent problem.

For this reason, it was initiated a study of a wide sector of the city located at the west of the town, with a total of 250 hectares in which through changes of building indicators, of plots dimensions and new draws it was possible to use them for industrial purposes in replacement of the existent agricultural ones.

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The entrusted study was the calculation of the monetary compensation that, due to the normative change, should the land owners pay because of the economic benefits that the added value of their plot of land gave them.

The area that should be analyzed is delimited by the railway track of the Railway Gral. Bartolomé Mitre, Av. de Circunvalación, Av. Uriburu and the municipal boundary road.

The area had according to the actual Regulation the subdivision of the earth with the possibility of urbanize in plots of great dimensions and with low building indexes and of earth occupation (0,07 y 0,25).

The problem presented had to aspects to be solved.

The first one consisted in determining how much the new requalification would influence with respect to the qualification existent in the land.

The second one was to give an economic value to the previous calculated percentage.

The first part of the task, how much would influence the requalification in the area, was carried out through the economic comparisons of profitability that the town planning models, before and after the requested modifications, affected by the technical coefficients that pondered and depreciated the different situations presented.

The coefficients used were taken from technical handbooks and tables of daily use in the appraisal practices and of wide acknowledgment.

The second entrusted part had several alternatives.

One of them was to carry out an accountant analyzes of all the expenses and economic benefits that a zone developer would have in the original situation and the ones that would result of implementing his project with the new requalification.

From their difference in both situations would arise the profitability that the administrative act generates in the land and consequently over this total it should be applied the rate of the contribution to pay.

This layout, simple and very easy to understand, presents some problems originated in the own characteristics of the enterprising to generate its business.

The first one, and very important, is which is the profitability that he would like to obtain from his investment? Which would be the reasonable profitability? It depends on the risk. Which is the reasonable risk?

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The second one is in which term he thinks to develop his project. We all know the influence that the fix expense generates in the cost and as a consequence in the final result, but besides...What infrastructure should have this expense?

If we go on analyzing we should think about which type of companies he would like to hire to perform the works, which commercial outline presents for the sale of real estates, which advertising cost, which are the costs of the money necessary for the project, from where he would obtain them, from his own funds, from a bank loan, etc, etc.

By adding a new question, conversations get more complicated...Which would be the selling price of the real estates? And if we add another consideration, what would happen? The value, in which moment? At the pre-sale date, when beginning the works, when there are few plots, some years later, etc. etc..

As we can see, all these questions can be raised in any investment analyzes, they are all reasonable and lead us to a long chain of meetings to reach a consensus on each of them.

In this situation, another element begins to take part, "Time is money" and the zone developer observes that his times are postponed, the possible investors begin to be nervous, his capital invested on land is inactive and his project can fail.

This procedure is logic, but it turns to be tedious and extended in time.

Before this situation, how could be reached a fair appreciation of the total of the contribution for the town planning requalification?

To answer this question lets think in our city, in our neighborhood, in our square, in the street we live.

Which is the patrimony of the city, of our neighborhood, of our neighboring and ours in relation to the urban environment that surrounds us?

The answer is nothing else than all the public spaces that were donated to the Town, the Commune in the continuous zone developing processes.

The value of this Patrimony, is always the same?

No, it is related to the cost of the land that surrounds every square, every street and it is incremented as time goes by, following a parallel curve to the growth of the real estate value of the sector.

If we associate that this is the real estate capital of the city involved in each project it can be adopted as a criterion that the added value of the town developer

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should be directly related to the public spaces that he should donate when carrying out his town planning project.

The solution presented to value the contribution for the urban requalification of a project turns to be a percentage, technically determined, that increases the patrimony of the citizens with the complementary donation of green and communal spaces, over which the urbanization regulations demand, in a percentage similar to the improvement that the requalification grants to the sector.

The final stage of the procedure was the determination of the value of the earth to be compensated to calculate the total of the contribution that should spend the town developer, since the idea is that this amount be reflected in other sectors of the city rather than upgrading the requalified sector.

The plan was presented for consideration of the superiority and was put into operation in the Municipality of Rosario, used in the negotiations with the enterprising and it finally concluded with its acceptance.

In the Development is presented the specific technical reasoning that based the procedure put forward.

DEVELOPMENT

It was carried out an analyzes of the variables that modify marketing conditions and parceling of the real estate included in the project denominated "INDUSTRIAL PARK 2" based on the town planning intervention that the Municipality of Rosario suggests and as a consequence of this the appraisal of the compensation that the developer should make to the Municipality.

The methodology to use is similar to the one developed to calculate the added value of the Housing Park Ludueña, where was apply a criterion of earth increase that the town council would receive proportional to the added value of the earth that the developer obtains.

The basic outline of the formulation of the added value algorithm is based in the principle of previous and after that has a wide diffusion in the specialized treatise on appraisal.

The technical foundation that guarantee the proposal is based on the fact that the elements to discuss are only the actual value of the earth and the potentiality of the prizes that the regulation generates, avoiding the analyzes of the costs of the

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works that should be carried out, which are particular of each developer, and in the profitability of them, which depends on its own capital and on the costs of getting money in case he does not have it.

This criterion enables the affected owners to know in an independent way the incidence that the change in the regulation produces on each real estate.

The incidence of the added value on each investor would be due to not only the relative position of each property in relation to the access roads but also would depend on the original dimensions of each plot, the affectation due to draws that reduce or benefit each property, the minimum measures of subdivision and the Surface Occupation Factor that are proposed on each sector, etc., elements that, there is no doubt, are the determining of the added value of each real estate.

The proposal would facilitate the existent of a total project, with clear rules for current owners and possible ones, since the demand to own a minimum of 20 hectares, so as to receive certain benefits as the provincial law and the municipal initial project propose, could produce holes in the project causing a discontinuity in the suggested plot.

The analysis of added values proposed does not involve the cost of the investments on infrastructure that should investors carry out in the area to fulfill the town planning regulation.

An element included in this analysis is the way of contemplating the value of the earth with which should be calculated the added value that future participants of the project should pay, since the real estate market in the area will suffer from important variations once the new regulations are passed.

In this aspect, it is proposed to relate the base value of the earth to the one of real estate located in similar situations to the ones analyzed in a previous date to the sanction of the Regulation.

In this project appeared a new situation that should be taken into account in the determination of the value of the added values and it is that the real estates are crossed by two high tension power lines with their corresponding easements, and the restrictions to the domain that they produce.

In the original state of the land properties, areas with rural exploitation characteristics, they originated minimum restrictions since the exploitations did not

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required buildable areas. This is reflected in the coefficients that the laws apply to value the aforementioned easements.

Due to the modification in the regulation and its possibility to build, the electricity easement affects in a determinant way the real estate since it is not possible to build within security areas.

This situation makes that the urban requalification, as it is not modify the electricity easement, does not influence over the affected surfaces and as a consequence should be deduced from the calculations of value that the new regulation grants to the sector.

With the aim of preventing the possibility that the enterprising carry out procedures to reduce the existent easements, by substitution of them with monoposts and/or their transportation to positions that reduce the area of affectation it should be stipulated that in the case that they are produced without monetary expenses by the owner they generate a recalculation for a new added value that should be calculated over the affected surfaces and with full potentiality of the new regulation.

The elements analyzed to determine the added value were:

- The decrease of green and communal spaces
- The modification on plots dimensions
- The suppression of draws and their potentiality
- The change of building indicators

ADDED VALUE FOR REDUCTION OF GREEN AND COMMUNAL SPACES:

The required situation according to the Urbanization Regulation indicates that due to town planning intervention the developer should effectuate a donation of a surface for green spaces and communal equipment purposes of 15%.

The project intends to reduce this donation to 8% of the usable surface based on the fact that the sector generates its own services and equipments.

This reduction enables a greater marketing surface an as a consequence a greater profitability of the earth use.

In the analysis, both situations that take place are studied, the "previous" one with the current regulation and the "afterwards" with the new regulations to

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implement and in both cases to calculate the spaces assigned to public use that should be donated.

In the case of the new regulation, considering the project a unit, the franchise of 10.000 m² that the regulation provides as exception is deduced in a unique opportunity.

The added value in this case is directly expressed in m² of surface that the enterprising recovers.

SITUACION ORIGEN

SUPERFICIE TOTAL DEL EMPRENDIMIENTO	= 398.397,93 m ²
TRAZADOS DONADOS	= 2.955,79 m ²
TRAZADOS CREADOS A DONAR	= 43.231,95 m ²
TOTAL TRAZADOS	= 46.187,74 m ²
REMANENTE	= 352.210,19 m ²
EXCENCIONES (6 Lotes)	= 60.000,00 m ²
SUPERFICIE AFECTADA A DONACIONES	= 292.210,19 m ²
SUPERFICIE A DONAR: 0,15 x 292.210,19 m ²	= 43.831,53 m ² (1)
AREA COMERCIALIZABLE: 352.210,19 m ² - 43.831,53 m ²	= 308.378,66 m ²

SITUACION PROPUESTA

SUPERFICIE TOTAL DEL EMPRENDIMIENTO	= 398.397,93 m ²
TRAZADOS DONADOS	= 2.955,79 m ²
TRAZADOS CREADOS A DONAR	= 51.614,08 m ²
TOTAL TRAZADOS	= 54.569,87 m ²
REMANENTE	= 343.828,06 m ²
EXCENCIONES (1 Lote)	= 10.000,00 m ²
SUPERFICIE AFECTADA A DONACIONES	= 333.828,06 m ²
SUPERFICIE A DONAR: 0,08 x 333.828,06 m ²	= 26.706,24 m ² (2)
AREA COMERCIALIZABLE: = 343.828,06 m ² - 26.706,24 m ²	= 317.121,81 m ²

PLUSVALIA POR REDUCCION DE DONACION ESPACIO PUBLICO

$$43.831,53 \text{ m}^2 - 26.706,24 \text{ m}^2 = 17.125,29 \text{ m}^2$$

ADDED VALUE FOR THE MODIFICATION OF THE DIMENSIONS OF THE PLOTS.

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The original regulatory situation practically makes the parceling and subdivision of the earth impossible since the minimum plot admitted was of 30 hectares.

The requested modification related to minor dimensions of the plots (0,30 and 0,45 Hectares) generates the possibility of dividing the earth and favoring its marketing generating a greater unitary value of the earth since there is a wider universe of possible buyers, achieving a greater speed of sale and getting as a consequence a quicker recovery of the investment.

For the comparative analysis are used the coefficients of the tables of the Appraisal Manual of Dante Guerrero. For the referent coefficient (C_0) it is adopted the corresponding one to an hectare.

To each Plot it is assigned its coefficient C_i gotten for the original surfaces and proposed by the new regulation.

The assimilators (A_i) to apply are the result of the division between the coefficient of each plot (C_i) and the reference Coefficient (C_0)

The modified surface of each plot (ST_i) is the product of the plot surface S_i for its corresponding assimilator

$$ST_i = S_i \times A_i$$

The total coefficient of dimensions for each proposal is obtained as the quotient between the total Modified Surface divided by the total Surface

$$C_T = ST_T / S_T$$

The added value that is obtained by the modification of the plots' size arises from the quotient effectuated between the difference of the Total Coefficient of Dimensions after the new regulation (C_{TN}) minus the original Total Coefficient of Dimensions (C_{TO}) and the original Total Coefficient of Dimensions (C_{TO})

$$PDL = (C_{TN} - C_{TO}) / C_{TO}$$

SITUACION ORIGINAL

SITUACIÓN ORIGINAL				SUPERFICIE	COEFICIENTE		SUP TRANSF
Secc	Manz	Graf	s/d	ORIGEN	C_i	C_i / C_0	ST_0
				(a)	(b)	(c) = (b) / 83	(d) = (a) x (c)
19	0	4		98539,00	58	0,69880	68858,58
19	0	5		49140,00	65	0,78313	38483,13
19	0	6		49114,00	65	0,78313	38462,77
19	0	7	1	49906,34	65	0,78313	39083,28
19	0	7	3	90880,11	59	0,71084	64601,52
19	0	22		60818,48	63	0,75904	46163,42
				398397,93	0,7421		295.652,71

SUPERFICIE TRANSFORMADA ORIGINAL 295.652,71 m²

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SUPERFICIE ORIGINAL 398.397,93 m²

COEFICIENTE DE DIMENSIONES TOTAL ORIGINAL

$$C_{TO} = 295.652,71 \text{ m}^2 / 398.397,93 \text{ m}^2 = 0,7421$$

PROPOSED SITUATION

When carrying out the calculation of the modified proposed surface it has taken place the reduction in the blocks "E" and "F" of the potential surface that would be obtain due to the new dimensions of the plots through the application of the affectation coefficient for the high tension power line that stops urban areas (0,10).

The proposed situation has as a result a new inferior surface than the original one, reducing the value of this added value, but with the exception that in case of modifications in the electricity easement it should be recalculated the variation that this presents in an exclusive way over this specific area.

-	SUPERFICIE	COEFICIENTE		SUP. TRANSF
	PROPUESTA	C _i	C _i / C _o	
	(a)	(b)	(c) = (b) / 83	(d) = (a) x (c)
A	131919,25	56	0,67470	89005,76
B	36543,05	68	0,81928	29938,88
C	58674,53	109	1,31325	77054,50
D	26853,25	70	0,84337	22647,32
E	21757,56	13	0,15663	3407,81
F	12953,29	13	0,15663	2028,83
G	54212,43	102	1,22892	66622,50
	342913,36	0,8478		290705,61

SUPERFICIE TRANSFORMADA PROPUESTA 290.705,61 m²

SUPERFICIE PROPUESTA 342.913,36 m²

COEFICIENTE DE DIMENSIONES TOTAL PROPUESTA

$$C_{NO} = 290,705,61 \text{ m}^2 / 342.913,36 \text{ m}^2 = 0,8478$$

ADDED VALUE FOR PLOTS' DIMENSION

$$PDL = (0,8478 - 0,7421) / 0,7421 = 0,1424 = \mathbf{14,24 \%}$$

The economic consideration of this added value with the purpose of considering the municipal capitalization should be only applied over the surface of green and communal spaces that should be donated in the original situation of the actuations, without the intervention of the proposed town planning, situation that

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contemplates the proportionality that incorporates the Municipality for its town planning intervention.

ORIGINAL SURFACE OF PUBLIC SPACES = 43.831,53 m²

ADDED VALUE FOR PLOTS´ DIMENSION

=43.831,53 m² x 0,1424 = **43.831,53 m²**

ADDED VALUE FOR DRAWS SUPPRESSION

The suppression of draws has two situations that should be taken into account:

DIRECT SUBSTITUTION:

The zone developers for drags suppression, should substitute an additional surface similar to the addition of the suppressed draws, this can be deduced from new draws to be donated in case they are originated.

This situation can produce a positive result, in which case this added value should be applied.

But if the result is negative, that is to say there is an increase in draws, this does not produce a value loss to the developer and should not be taken into account since the reduction of the tradable earth redounds in a direct benefit in the amount of plots that can be sold and it is a natural consequence of the town planning project.

To evaluate this situation it should be analyzed the balance of the surfaces affected by draws, whether they are donated or not, that result from both situations set to calculate the tradable surfaces useful in both cases.

SITUACION ORIGINAL

SITUACIÓN DOMINIAL					SUPERFICIE	donado	TRAZADOS EXISTENTES		sup.calle	Neto
secc	Mz	Graf	s/d	TITULAR			Largo	ancho		
19	0	4		Alabern Fabrega y Cía. S.A.	98539,00		211,20	55,00	11616,00	86923,00
19	0	5		Cruz Roja Argentina	49140,00		104,28	55,00	5735,40	43404,60
19	0	6		Milicic Hugo V.	49114,00		105,92	55,00	5825,60	43288,40
19	0	7	1	Alabern Fabrega y Cía. S.A.	49906,34		189,17	20,00	3783,40	45247,94
							25,00	35,00	875,00	
19	0	7	3	Alabern Fabrega y Cía. S.A.	90880,11		120,92	20,00	2418,40	78483,56
							285,09	35,00	9978,15	
19	0	22		Alabern Fabrega y Cía. S.A.	60818,48	2955,79	150,00	20,00	3000,00	54862,69
					398397,93	2955,79			43231,95	352210,19

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SITUACION PROPUESTA

SITUACIÓN DOMINIAL					SUPERFICIE	donado	TRAZADOS NUEVOS			Neto
secc	Mz	Graf	s/d	TITULAR			Largo	ancho	sup.calle	
19	0	4		Alabern Fabrega y Cía. S.A.	98539,00		211,20	70,00	14784,00	81949,70
							180,53	10,00	1805,30	
19	0	5		Cruz Roja Argentina	49140,00		104,28	70,00	7299,60	41840,40
19	0	6		Milicic Hugo V.	49114,00		105,92	70,00	7414,40	42919,07
									1219,47	
19	0	7	1	Alabern Fabrega y Cía. S.A.	49906,34		103,00	30,00	3090,00	46396,34
							21,00	20,00	420,00	
19	0	7	3	Alabern Fabrega y Cía. S.A.	90880,11		208,55	30,00	6256,35	75834,36
							265,57	20,00	5311,40	
							173,90	20,00	3478,00	
19	0	22		Alabern Fabrega y Cía. S.A.	60818,48	2955,79	161,45	10,00	1614,50	
							68,00	20,00	1360,00	54888,19
					398397,93	2955,79			51614,08	343828,06

After being analyzed the situations set out in the park before and after the new requested regulation it can be observed that the new surface of draws is higher in comparison to the existent one previous to the enactment of the regulation, so it is not appropriate that this added value be applied.

THE MARKETING OR DRAW USE:

If the suppression of the draw generates added value for the marketing not only of that land surface but also for the effects that produce in the surroundings, whether for direct contact with support services or for configuration of neighborhoods and/or closed parks, it should be considered the influence that this suppression generates between the original configuration of the land and the resultant after the regulation.

This unearned increment is generated by the suppression of the draws, so this administrative measure entails a potentiality that cannot be compensated only with the mere substitution of the land expressed in the previous point and without leaving aside the future urban potentiality that it generates to the remaining surrounding to the zone developers.

It is for this, that it is originated an equivalent surface to this unearned increment that should also be compensated. Naturally, it will be related to the original

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surface of the suppressed draws that generate it but affected by a coefficient that should be evaluated in each case.

In the analyzed case, the suppression of the road parallel to the tracks of the former Railway Gral. B. Mitre (road 1905) is a situation that powers in a fundamental way the purpose of the project submitted by the enterprising since it enables a direct contact with the railway and a direct exploitation linked with the logistic function that the enterprising requests for the real estate.

The potentiality of the asset, according to its potentiality, can not be indemnified with a surface no less than three (3) times its surface, since one has been included in the surfaces to donate it is appropriate to compensate in added value concept two (2) times its surface.

This added value as in the case of the decrease of the area of public spaces to donate it is directly expressed in earth surface.

PLUSVALÍA POR SUPRESIÓN DE TRAZADO =

Por sustitución = 0,00 m².

Por sustitución por comercialización o uso:

Área calle 1905 suprimida = 14.629,00 m²

Coefficiente de comercialización o uso = 3

= 14.629,00 m² x (3 – 1) = 6.240,00 m²

ADDED VALUE FOR MODIFICATION OF BUILDING INDICATORS.

The current indicators in the area were for the Surface Occupation Factor and the Total Occupation Factor of 0,07 or 0,25 for the establishment of the logistics undertaking as it is expressed in the current urbanization regulation.

The new regulatory situation enables the increase of the Surface Occupation Factor and the Total Occupation Factor, reaching coefficients of 0,60 or 0,50 depending on the earth area.

This modification makes that an investor need to acquire a smaller surface to execute the same covered surface, so naturally he raises the unit value of the earth of the real estate.

For the appraisal of the expressed there have been developed tables that relate the original surfaces (SE₀) of each plot for its original Surface Occupation

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Factor and the surfaces resultant from the project for its new Surface Occupation Factor coefficient.

It should be preceded in a similar way to the added value for plot dimensions, calculating the total building surface in each block of the project in the original conditions (SET_O) and the total building surface with the new regulations (SET_N). that emerge from the addition of all the individual building surfaces of each plot or block.

$$SET_O = \sum S_{iO} \times FOS_{iO}$$

$$SET_N = \sum S_{iN} \times FOS_{iN}$$

The increase of the edificability arises from the subtraction between the buildable surface with the new regulation and the original buildable surface.

$$IE = SET_N - SET_O$$

The added value for Edificability arises as the quotient between the increase of edificability and the original buildable Surface

$$PE = IE / SET_O$$

In this park the influence of the electricity easement should be contemplated, it conditions the possibility to construct, so it should deduced the area of the high tension power line that crosses each block in the calculation of the edificability.

In case of a decrease or suppression of the affectation by action of the state and that generates utilities without the influence of the enterprising, it should be recalculated the added value that the new regulation generates in the sector of electricity easement.

This affected surface by high tension power line is indicated in column "c" of the following chart and the reduction in column "h".

SUPERFICIES		Sup electr. (c)	Coeficientes		SUPERFICIES EDIFICABLE			
			FOS o (d)	FOSn (e)	ORIGINAL (SE _O) (f) = b x d	PROPUESTO (SE _N) (g) = b x e	Red. Electr. (h)=c x e	Incremento (i)=g-f-h
(a)	(b)	(c)	(d)	(e)	(f) = b x d	(g) = b x e	(h)=c x e	(i)=g-f-h
A	131919,25		0,25	0,25	32979,81	32979,81		0,00
B	36543,05		0,25	0,25	9135,76	9135,76		0,00
C	58674,53		0,25	0,6	14668,63	35204,72		20536,09
D	26853,25		0,25	0,1	6713,31	2685,33		-4027,99
E	21757,56	14384,52	0,25	0,5	5439,39	10878,78	7192,26	-1752,87
F	12953,29	9621,85	0,25	0,5	3238,32	6476,65	4810,93	-1572,60
G	54212,43	1309,69	0,25	0,6	13553,11	32527,46	785,81	18188,54
	342913,36				85728,34	129888,50		31371,16

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SUPERFICIE EDIFICABLE ORIGINAL (SE₀) = 85.728,34 m²

SUPERFICIE PROPUESTA (SE_N) = 129.888,50 m²

INCREMENTO DE EDIFICABILIDAD (IE)

$$= 129.888,50 \text{ m}^2 - 85.728,34 \text{ m}^2 = 31.371,16 \text{ m}^2$$

$$PE = 31.371,16 \text{ m}^2 / 85.728,34 \text{ f} = 0,3659 = \mathbf{36,59 \%}$$

PLUSVALIA POR EDIFICABILIDAD

SUPERFICIE DE ESPACIOS PUBLICOS ORIGINAL = 43.831,53 m²

PLUSVALIA POR EDIFICABILIDAD

$$43.831,53 \text{ m}^2 \times 0,3659 = 16.039,57 \text{ m}^2$$

TOTAL ADDED VALUE CALCULATED IN M²

For decrease of green space and communal equipment = 17.125,29 m² (1)

For decrease of the sizes of the plots = 17.125,29 m² (1)

For draws suppression = 29.258,00 m² (3)

For increase of the edificability (36,59 %) = 16.039,57 m² (4)

Total added value in earth meters (1)+(2)+(3)+(4) = 68.662,86 m²

CALCULATION OF THE ECONOMIC VALUE TO COMPENSATE

So as to determine the amount of added value that the town developer should pay it was used the value of the earth of the plots at the front of the Av. Uriburu, date 30th October 2008, for one hectare, without infrastructure and in the conditions previous to the enactment of the regulation, which resulted in u\$a 8,00/m².

The new regulations, when getting public knowledge potentiated important variations of the real estate value of the area due to the generated expectation, but with the ignorance not only of the owners but also of the real estate agencies of the real content of the regulation and its special characteristics, particularly the added value contribution.

In this situation, new values from comparable zones to the project were gotten and homogenized through the application of the assimilators that contemplate the relative locations of the antecedents and the studied area.

The study was carried out since there was the need to calculate in the future new added values, in correspondence with the regulation, new real estates can be annexed to the project or generate new parks and since the value of the earth

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does not present parameters that allow its monetary actualization, except for the one expressed by the market values, and the same one in the area will be indefectible influenced by the new regulation, it was convenient to fix a new reference out of the area that allow such updating.

The global value of the earth affected by the project was calculated analyzing the values of each of the fractions contemplating the relative situation of each of them with Av. Uriburu, the affectation by the high tension power lines, the dimensions, it forms and the topography that they present, since one of them is practically without vegetable ground because it had been used for a brick oven.

The summary is presented in the following charts

CALCULO DEL COEFICIENTE DE ELECTRODUCTO

				TITULARES	SUPERFICIE m ²	COEF. POR AFECTACION DE ELECTRODUCTO				
secc	Mz	Graf	s/d			ANCHO	LARGO	S- afect	Sup x 0,60	COEF-
19	0	4		Alabern Fabrega y Cía. S.A.	98539,00	211,20	34,00	7180,80	4308,48	0,9563
19	0	5		Cruz Roja Argentina	49140,00	104,28	34,00	3545,52	2127,31	0,9567
19	0	6		Milicic Hugo V.	49114,00	105,92	34,00	3601,28	2160,77	0,9560
19	0	7	1	Alabern Fabrega y Cía. S.A.	49906,34	35,00	34,00	1190,00	714,00	0,9857
19	0	7	3	Alabern Fabrega y Cía. S.A.	90880,11	288,00	34,00	9792,00	5875,20	0,9354
19	0	22		Alabern Fabrega y Cía. S.A.	60818,48	150,00	8,20	1230,00	738,00	0,9879
					398397,93			26539,60	15923,76	0,96

CALCULO DEL VALOR DEL POLIGONO

				TITULARES	SUPERFICIE	COEFICIENTES					VALOR		
secc	Mz	graf	s/d			DIM	FOR	UBIC	TOP	ELECTR.	TOTAL	UNIT	TOTAL
19	0	4		Alabern Fabrega Y Cía. SA.	98539,00	58	1,00	0,70	1,00	0,9563	0,4678	3,74	368.747,87
19	0	5		Cruz Roja Argentina	49140,00	66	1,00	0,70	1,00	0,9567	0,5325	4,26	209.348,07
19	0	6		Milicic Hugo V.	49114,00	66	1,00	0,70	1,00	0,9560	0,5321	4,26	209.083,31
19	0	7	1	Alabern Fabrega Y Cía. S.A.	49906,34	65	0,80	0,70	1,00	0,9857	0,4323	3,46	172.588,07
19	0	7	3	Alabern Fabrega Y Cía. S.A.	90880,11	57	1,00	0,75	1,00	0,9354	0,4818	3,85	350.261,20
19	0	22		Alabern Fabrega Y Cía. S.A.	60818,48	62	1,00	0,85	0,80	0,9879	0,4704	4,01	244.143,91

VALOR TOTAL DEL LAS FRACCIONES USD 1.460.379,72

VALOR UNITARIO DE LA TIERRA PARA EL POLÍGONO

$$\text{Superficie total} = 398397,93 \text{ m}^2$$

$$\text{Valor total del polígono} = \text{USD } 1.460.379,72$$

$$\text{Valor unitario del polígono} = \text{USD } 1.460.379,72 / 398397,93 \text{ m}^2 = 3,66 \text{ USD/ m}^2$$

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PLUSVALIA A COMPENSAR

Superficie a compensar = **68.662,86 m²**

Paridad cambiaria = **1 USD = 3,295 \$**

Valor unitario del dólar = **3,66 USD/ m²**

VALOR DE LA PLUSVALIA QUE SE DEBE COMPENSAR

3,66 USD/ m² x 3,295 \$/ USD x 68.662,86 m² = \$ 828.053,49

CONCLUSION

The methodology was accepted by the developer, approved by the Deliberating Council through the Regulation N° 8.482/2009, generating an additional donation of 57% of earth (68.662,86 m²) in added value concept.

With the same procedure in the Industrial Park N°3 (Regulation N° 8475 /2009) the town developer, for added value, should donate 45.678, 69 m² additional of earth, a 105% more than the original surface.

So as to guarantee the updating of the amount to compensate in both cases it was related with the cost of the block with asphalt.

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