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Urban grammars. Axiological Mapping and Strategies Generation for the Redevelopment of Historical Urban Fabrics

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Abstract This paper presents a synthesis of a larger work of analysis, evaluation, and programming of the redevelopment of the building heritage of the historical center of Ragusa Superiore, a large urban context characterized by a predominantly diffuse value and by low localization tension. The study presents a model, and related application outcomes, which on the basis of accurate characterization of the architectural units of an extended sample, allows each of them to be assigned the appropriate category of intervention, as provided for in the formation of Urbanistic Detailed Plans, and by the Detailed Plan currently in force. This general model is associated with four auxiliary modules: the first one is used for the typification of the building heritage; the second one presides over the calculation of the parametric costs by type; the third is a real estate market appraisal model for the analized buildings in the situation with and without intervention, to measure the differential asset value resulting in the application of the specific category of intervention; the fourth module is situated following the other processes and allows to choose the best alternative among those produced on the basis of a simplified model of multidimensional analysis. The entirety of this study fits within a linguistic theoretical and methodological framework, according to the hypothesis, consistent with the transformational generative grammar, that urban fabric can be understood as a text with internal rules, from which it is possible to generate a plurality of coherent combinations to choose the option with the highest communicative efficacy.

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1 | INTRODUCTION – THEMES, CONTENT AND OBJECTIVES

Dense and structured historic centers are territorial units characterized mainly by the urban fabric, the shape of the urban capital in which immobilized the majority of the share value accumulated by the settled community, and is layered on the whole of the *artifacts* in the manner and form which they have overseen the *institutions* appointed to give this material organization and perspectives.
The ways of such a multiple "being worth" are attributable to two orders of complexity: the first order is the functional one (in a broad sense) and concerns the interdependencies between urban system components; the second order is the economic one and relates to the way in which these interdependencies stabilize *preferences*.
This complexity allows one to consider the historic city in its present form as an "unamendable gesture" an inevitable condition of ''being urban" of the communities and consequently an "order which grants few adventures":

> *Every adventure is a norm to come; every conduct inexorably tends to become customary [...] It is a painful and necessary truth in the knowledge that the individual may experience a few adventures in the exercise of art. Every epoch has its peculiar gesture and the only creative enterprise is to emphasize that gesture [...] Understanding that every adventure is inaccessible and that our most loose motions run along predetermined destinies as those of chess pieces, it is obvious for man who has passed the winding outskirts of art and confesses that, from the terraces of clear unbreakable righteousness of Urbe [...] the Adventure and the Order ... I like both disciplines if there is heroism in those who follow them. That one does not look too much at the other [...]"*
>
> *Borges, 2007, pp. 62-63*

In causal chains that govern the course of the historical centers, the questions of values and valuations precede design choices, both in individual behavior – location decisions and managing individual properties – and in planning choices, where the decision-making processes aimed at environmental and infrastructural rehabilitation influence imbalances designed to awaken dormant potential, generating tensions in demand and prices.
The latter measures are only part of the value-generated differential, which nonetheless often become the main goal, reducing the profile of the *medium and long-term* redevelopment policy to that of regeneration programs in the *short term*.
These measures constitutes the "concretely feasible" alternative to the true conservation of the urban and social fabric efforts, and thanks to the spread of simplified evaluation tools and based on the exclusive use of the *rating* (Sullivan *et al*., 2014; Hemphil, 2004; Berardi, 2013 Elgert, 2018), rather than on the identification and measurement of values, they produce "products" with high abstract energy, environmental, and functional performance, etc. (Sharifi and Murayama, 2014), whose effects are the price increases both in the affected segment and in the neighborhood.
The effect is well known: historic districts are transformed into exclusive *locations* (Gould and Lewis, 2012), and historical centers in places where everything is defined through the filter of abstract real estate potential, and that the plethora of trades has the effect of "filling with voids".
This "*rational* euphoria" hides the consequent negative impacts in terms of social and economic ecology, the heavy effects on population structure and on connected neighborhood models, as well as on the operation of minute economic activities, and finally the distortion of the architectural heritage, rehashed and transferred in non-physiological proportions to the sectors of the "seasonal economy" - gadgets, catering, and complementary accommodation.

The particular case of historical centers characterized by low localization tension, due to functional deficiencies and to the constructive and typological rigidity of the basic housing, is marked by the cumulative effect of two unfavorable circumstances:

- One, regarding individual motivations, concerns the prevalence of rehabilitation costs on the expected market value differentials, which results first in the episodic abandonment, then like wildfire;
- One, regarding collective intentionality, concerns the prevalence of urban quality over architectural quality, that is, the overall value over individual value (Conte and Manno, 2012), which is regulated by generative evaluation-programming tools, which point to a variety of internally consistent alternatives

Even the negotiating perspective, potentially more flexible in adapting *contingent needs* to *resistant forms*, is not without risks as regards the subversion of the rules of meaning, to which the non-standardized point transformations are easily subtracted.
These, and other possible considerations, support the search for approaches based on the rules of the "palimpsest", a form in tension between conventional and singular values, between structural course and corpuscular events, between normativity and creative impetus.
The above introduces the (modest) contribution and the perspective that this experience tends to add – though always in the "ground" of science of evaluations – to the formation of redevelopment programs of the historic urban fabric.

The proposal presented here follows the belief that design and evaluation are coalescing activities – therefore not autonomous, and in two ways:

- it is not the project, since no prescription can be accepted in faith, that is in the absence of explicit and strong motivational relationships between the current state and the expected outcome;
- even more so it is not evaluation, which takes the result, and therefore the associated decision-making process, as a context for the verification of the valutative judgment, especially in conditions of uncertainty and in the presence of multiple axiological profiles, sometimes converging, more often clashing.

In the context of this consubstantiality of evaluation and project, the proposed contribution presents a programming model of the construction activity of the Historical Center of Ragusa Superiore, organized in such a way as to define the overall structure of Categories of Intervention (CI) producing a multiplicity of internally coherent strategies, each corresponding to a different degree of protection, and evaluated from the points of view of a reasonable number of judgment criteria relating to four different axiological matrices.
Consistent with the detailed urban planning instrument in force - the Detailed Plan – the model assumes a minimal unit of study and representation, the Architectural Unit (AU) (Boscarino *et al*., 1994) working as bearer of the results of observation, measurement, description, characterization, and evaluation (quantitative-monetary and qualitative) of the building heritage studied in a large sample of CS.
The approach herein outlined is a "generative approach" exerted from below, starting from the AU, through which a set of coordinated logic functions generates a plurality of strategies for "sorting" each AU between different CIs (Giuffrida *et al*., 2013; Trovato and Giuffrida, 2014; Giuffrida and Gagliano, 2014); for this purpose, each AU has been characterized on the basis of a plurality of criteria as further specified.
Thus, each strategy, can in turn be characterized, evaluated, and classified by aggregating the assessments that the different AU assume in the configuration hypothesized by the strategy itself; this evaluation is carried out in reference to a set of criteria higher than those used to evaluate every single AU.

2 | MATERIALS

2.1 The case of the historical center of Ragusa: the database and the identification of the sample

Ragusa is the capital of the southernmost province of Italy and one of the eight cities in southeastern Sicily that, in 2002, were registered in the UNESCO World Heritage List for the innovation of their urban planning systems and the architectural value of the late baroque monuments.

Fundamental to the renewal that characterizes the urban structure and the current image of the historical center, is the reconstruction process that began after the earthquake, in 1693, that destroyed Ragusa and all the major centers of Val di Noto (Valente, 2001), one of the three administrative districts in which Sicily had been divided since the Muslim age. The reconstruction provided an opportunity for the expansion of the city, whose original nucleus was rebuilt by the clergy and the landed aristocracy, while the emerging bourgeoisie succeeded in locating themself in the adjacent "Patro" hill where Ragusa Superiore rises (AA.VV., 1991; Caruso and Perra, 1994).

The "new city" was built according to an orthogonal grid pattern of rectangular blocks, hinged on two main axes. Its construction, continued for over two and a half centuries from east to west.

The urban fabric is characterized by very different types of blocks and buildings; to the east, a square grid of blocks equal to about 90 m, where important buildings of the renaissance bourgeoisie and other monumental presences are located; to the west, the fabric is fragmented into smaller blocks, which are in turn divided into lots that are, in some cases, less than 20 meters squared. This planimetric fragmentation corresponds a more recent and poorer edification.

The Detailed Plan of the historical center of Ragusa, approved on 23/11/2012 (Departmental Decree no. 278/DRU) (Municipality of Ragusa, 2012) involves a heritage of 8600 architectural units. This instrument, "inspired by the principles of conservation, restoration, rehabilitation, and enhancement of the architectural and typological spatial characteristics of the territory concerned, re-evaluating the historical, environmental, and cultural role as well as respect for the landscape value, aims to regulate, in an organic way, interventions on buildings and spaces of the historic centers of the Municipality of Ragusa, in order to contribute to the improvement of the living standards and quality of life of its inhabitants." The Geographic Information System, which constitutes the database, provides dimensional, typological, material, and broad technical-constructive information, that have been selected, unified, integrated, re-elaborated, and coordinated in the more general perspective of the formation of a generative strategic planning model (Haley, 1997).

The model concerns a sample of 1788 Architectural Units, aggregated into 118 blocks between Via Roma and C.so Mazzini. Each AU is described according to 16 characteristics, organized into four groups in a database with 940 fields distributed among 30 linked spreadsheets; the contents of the latter are largely derived by translating the data into meaningful units of information and, subsequently, in attributes and evaluations aimed at the sorting of the sample AUs between the different categories of intervention.

2.2 Analisi dello stato di fatto

Among the early functions that can be performed on the database, the simple query allows to extract general and aggregate information on the overall structure of the sample analyzed.

The population density is not high, but it is worth highlighting the presence, in the survey, of numerous exhibited goods, strategic buildings, important public buildings of historical-architectural importance.

The first operation performed on the main database was the identification of the UA (Figure 1).

Identification		Location				Dimensional characters											
											Surface areas						
Building unit	id Building unit	sector	block	id street	street name	ground floor surface	perimeter	commercial	H med Wall	elevation	No elev.	F1 volume	Front width	Width other fronts	Surface area of fronts	Glazed surface
						mq	mq	mq	ml		n	mc	ml	ml	mq	mq
1	1298	4	112	128	Via Scale	31,75	26,74	63,5	3,1	2 full elevation	2	196,85	9,03	10,53	121,27	18,95
2	1299	4	112	125	Corso Mazzini	74,32	35,07	222,96	3,1	3 full elevation	3	691,18	4,4	7	106,02	16,57
3	1300	4	112	125	Corso Mazzini	65,35	34,6	130,7	3,1	2 full elevation	2	405,17	11,9	2,4	88,66	13,85
4	1301	4	112	125	Corso Mazzini	20,1	18,1	60,3	3,1	3 full elevation	3	186,93	5,35		49,76	7,77
5	1302	4	112	125	Corso Mazzini	40,9	28,2	122,7	3,1	3 full elevation	3	380,37	5,95	13,21	178,19	27,84
6	1303	4	112	125	Corso Mazzini	40,89	28,09	81,78	3,1	2 full elevation	2	253,52	6,63		41,11	6,42
7	1304	4	112	125	Corso Mazzini	25,64	20,39	76,92	3,1	3 full elevation	3	238,45	7,8		72,54	11,33
1	1317	4	113	125	Corso Mazzini	46,93	31,46	93,86	3,1	2 full elevation	2	290,97	5,3	9,9	94,24	14,73
2	1318	4	113	125	Corso Mazzini	28,08	22,88	84,24	3,1	3 full elevation	3	261,14	6,31		58,68	9,17
3	1319	4	113	125	Corso Mazzini	48,07	29,1	144,21	3,1	3 full elevation	3	447,05	7		65,10	10,17
4	1320	4	113	125	Corso Mazzini	75,83	35,34	227,49	3,1	3 full elevation	3	705,22	8,9		82,77	12,93
5	1321	4	113	125	Corso Mazzini	83,1	38,71	249,3	3,1	3 full elevation	3	772,83	12,6		117,18	18,31
6	1322	4	113	125	Corso Mazzini	50,45	29,01	201,8	3,1	4 full elevation	4	625,58	6		74,40	11,63
7	1323	4	113	125	Corso Mazzini	104,76	41,13	314,28	3,1	3 full elevation	3	974,27	10,26		95,42	14,91
8	1324	4	113	125	Corso Mazzini	40,05	25,38	120,15	3,1	3 full elevation	3	372,47	6,4	5,87	114,11	17,83
9	1325	4	113	125	Corso Mazzini	88,78	40,09	266,34	3,1	3 full elevation	3	825,65	12,7	3,4	149,73	23,40
10	1326	4	113	125	Corso Mazzini	124,3	54,62	372,9	3,2	3 full elevation	3	1193,28	13,4	6,86	194,50	24,31
11	1327	4	113	125	Corso Mazzini	41,75	26,12	125,25	3,1	partial upper cubage	3	388,28	6,3		58,59	9,15
12	1328	4	113	125	Corso Mazzini	62,96	31,98	125,92	3,1	2 full elevation	2	390,35	4,1		25,42	3,97
13	1329	4	113	125	Corso Mazzini	19,5	17,75	39	3,1	2 full elevation	2	120,90	4,4		27,28	4,26
14	1330	4	113	142	Vicolo Scale	59,01	35,33	177,03	3,1	3 full elevation	3	548,79	4,76	16,3	195,86	30,60
15	1331	4	113	128	Via Scale	57,55	30,16	115,1	3,1	2 full elevation	2	356,81	3,05	7,13	63,12	9,86
16	1332	4	113	128	Via Scale	32,43	26,87	97,29	3,1	3 full elevation	3	301,60	10,46	4,6	140,06	21,88
17	1333	4	113	142	Vicolo Scale	37,91	36,6	75,82	3,1	2 full elevation	2	235,04	6,81	3,6	64,54	10,08
18	1334	4	113	142	Vicolo Scale	78,33	45,48	234,99	3,1	3 full elevation	3	728,47	9,2	2	104,16	16,28
19	1335	4	113	125	Corso Mazzini	41,41	29,42	82,82	3,1	2 full elevation	2	256,74	6	6	74,40	11,63
20	1336	4	113	125	Corso Mazzini	36,78	27,27	73,56	3	2 full elevation	2	220,68	7,76	8,22	95,88	14,98

Figure 1 Excerpt of the Database of Architectural Units

Subsequently, quantitative (*i.e.*, ground floor surface, total elevation above ground, gross surface area, perimeter, surface elevation, surface area of the roof, volume) and qualitative attributes were associated to each AU and grouped in extrinsic, intrinsic, technological, and architectural characteristics.

The extrinsic positional characteristics are the accessibility, measured according to the proximity of the AU to qualified urban voids and to the axes of greater symbolic and functional value, the intended use of the ground floor and the degree of use, shown in Figure 2. The majority of the units, 1279, are used, 128 units are partially used, and 380 are unused.
For the intrinsic positional characteristics consideration was taken of the panoramic views, the elevation and the brightness of the analyzed architectural unit.

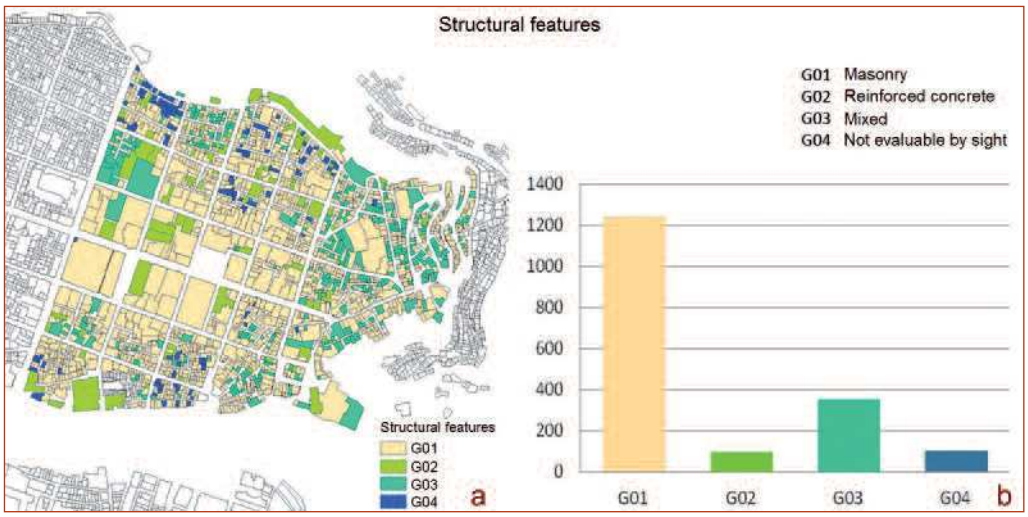

Figure 2 Positional extrinsic features

The technological characterization (Figure 3), as well as structural aspect, considers the state of preservation and quality of the finishes and fixtures.

From the point of view of construction characteristics, the analysis of the data revealed a predominance of masonry buildings, in 1240 total compared to 96 reinforced concrete buildings, 351 buildings with mixed structure, and 101 buildings that could not be classified.

The maintenance degree is mostly sufficient; there are 17 building units in ruins, 55 in poor condition, and 349 in a very poor condition. 150 buildings have already been restored and there are 171 buildings that the P.P.E. considers in good condition.

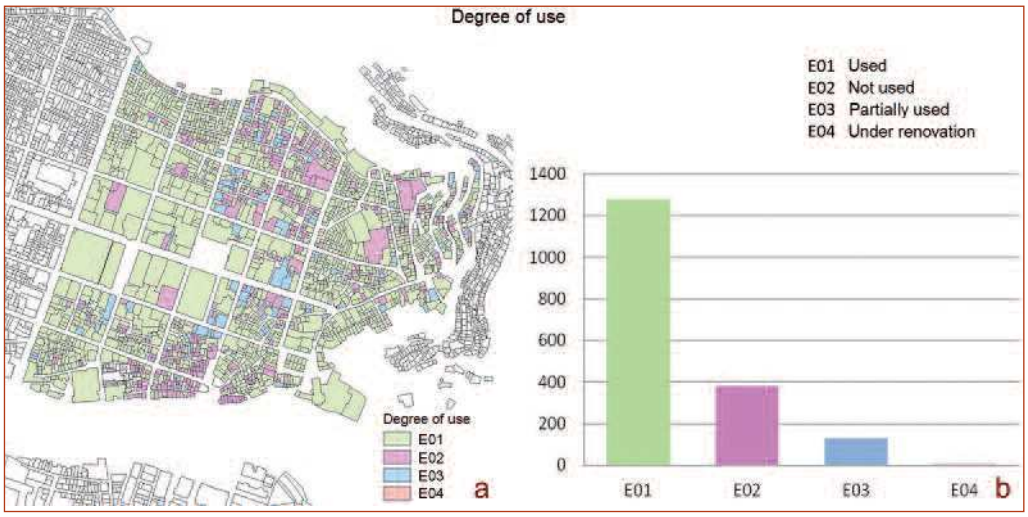

Figure 3 Technological features

Figure 4 shows the architectural characterization of the sample, in which it considers the typological aspect, estimated age, type of the roof, the value of the figurative elements and overall decorum. The typological structure is characterized by the widespread use of basic housing (1405 AU), with a substantial proportion of replaced buildings (189 AU of contemporary residential buildings), 16 AU of special monumental construction, by a further 11 AU contemporary specialist construction, and 10 monumental religious buildings, 99 palaces and 63 mansions.

The building fabric primarily dates to periods prior to 1950. A good number of architectural units, 363 total, fully present the original decorative apparatus on the façades, 450 have maintained it prevalently, for 62 it remains a strong component, while there are only 8 buildings with the presence of significant artistic elements of relief (friezes, shrines, etc.). 634 units do not present decorations on the façade and 271 have retained only a small part.

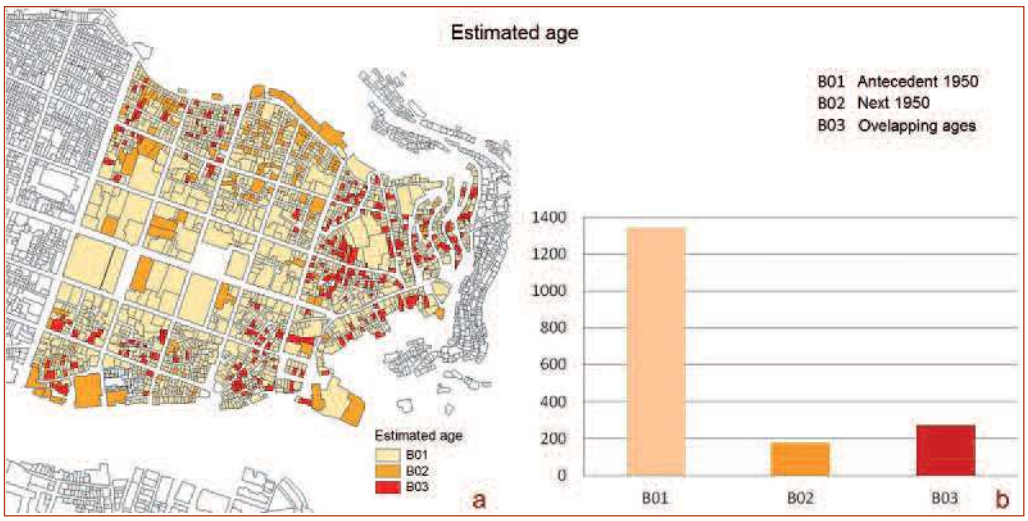

Figure 4 architectural features

3 | METHOD

As anticipated, this paper proposes a programming model of the building activity in the historical center of Ragusa Superiore that is able to select the optimal strategy among those that the "sorting" functions generate from a finite set of rules, under which each Architectural Unit is assigned to a specific Category of Intervention and by modifying which one obtains a different strategy, characterized by a different degree of protection.
The possibility of generating a potentially unlimited number of CI configurations attributed to the different AU from a finite number of rules is consistent with a linguistic approach that assumes the city as a text, and its parts as semantic units characterized by a structured set of "significance-bearers", whose aggregation gives rise to configurations whose significance (value, for our purposes) changes as the state of each significant unit changes – the sign in linguistics, the AU in our case.

3.1 Urban Grammar

Grammar is, in general, the study of the way in which meaningful forms become a communicative act in a formally accomplished manner, regardless of the content. It follows the formation of a set of rules with respect to which a "well-formed sentence" is recognized. These rules "govern the phonological, morphosyntactical, and lexical systems, whose complex interaction is responsible for the functioning of language" (Vineis, 1994, p. 371).
The broader meaning of grammar includes the wide variety of structures through which the spoken language gives rise to effective communication situations in the universe of "linguistic diasystem" (a set of systems close to each other in regards to the structures that they share) whose elements are combined in the act of speaking. This meaning includes linguistic areas that have been distinct and separately elaborated over time, and in many cases even opposite, each possessing several orders of primacy. Consequently, and for these purposes, it may be more useful to simplify and specify the sense of this apparent thematic and conceptual deviation.
If the grammar definition is extended to the consideration of only morphosyntactic aspects of a linguistic system, its proper meaning is restricted to the study of the consistent provisions of significant forms, and starting from the smallest linguistic unit with meaning. These can be: "linked" when they cannot be separated from the word that they form, such as morphemes at the level of constructing meaningful words and appropriate use; "free" as indeed the words used result in aggregates with increasing complexity (syntagms or sentences) whose grammatical features, consist in the formal completion at different levels of complexity, from phrases to sentences of different articulation and complexity.
There are two further aspects worth indicating in an attempt to delineate the potential of a grammatical approach to the historic city. The first aspect is the autogenous forces that govern the material morphology and its syntax, and the second the evolutionary course of these forms as a whole.
To the first aspect is related the contribution of the "transformational generative grammar", which will be resumed later in this paper, and which gives substance to this methodological proposal; in this sense we assume grammar as "competence of the speaker", who progressively internalizing the "morphosyntactic rules immanent to one's own linguistic system is capable of producing an infinite number of grammatically correct sentences and judging the grammaticality of utterances produced by interlocutors" (*ib.*).
To the second aspect is related the historical or comparative grammar that explores the evolution of significant forms in time and space, and identifies invariants and modalities of adjustment.
In the interpretation of the historic urban fabrics and their transformations, an "urban grammar" can be seen as a set of rules that organizes the repertoire of objects, properties and functions that it

consists of, the arrangement of which (that is, the way of making the constitutive behavior consistent – for our purposes, the urban fabric made up of architectural units taken as minimum significance units) intends to intervene on signifying forms with the aim of contributing to making the urban context a "well-formed" text.
To this end, it may be useful to recall the distinction between *constructive*, *selective*, and *generative* grammar (Moro, 2006), the latter of which will be presented in more detail in the following session.
Constructive grammar provides the instructions to get a "well-formed sentence" (what to do). With it is consistent the approach to a city assumed by the traditional urban plan based on the combination of conformative and expropriation constraints.
These constraints work as a system of redundant forms – in the sense of communication theory – aimed at ensuring the success of the intentionality of the decision-maker who secures the preservation process in order to protect it from regulatory gaps or the possibility of multiple uses of the architectural heritage left to the arbitrary will of unregulated conduct. In linguistic terms: the sender bands the message with a clarifier surplus in order to reduce the risk that significance gaps or ambiguity can induce the receiver to understand different meanings, as happens in the case of selective grammars (Rizzo, 1999).
A *selective grammar*, on the other hand, provides the elements to be combined and a list of combinations to discard (what should not be done) as the principles or general meta-rules whose recursive interaction selects well-formed sentences. It is typical of the urban plan in contexts in formation or weakly structured, where the general principles of the formation of the urban space are made explicit without ever supposing definitive shapes and patterns to be reproduced; It is likely to result in inappropriate combinations that become useful experiences for understanding the general functioning of the combinatorial mode, but above all stimulates the production of new forms by not imposing any. It is typical of the plan based only on conformative constraints that indicate some limits but not the contents of the project, and above all it is open to contingent modifications with regard to needs and resources.

3.2 Generative Grammar and strategic urban planning

Generative grammar is an iterative system that produces a potentially unlimited repertoire of forms of expression from a limited set of rules (what one can do). It is typical of strategic planning in structured but developing contexts and affected by specific and diffuse problematic issues, as in the case of the historical "not monumental" city where the urban quality prevails over the architectural one, and there is a substantially stable relationship between the resident population and the urban fabric.
The reference of the programming is not the subject per se, but the implicit knowledge that produced it (competence of the speaker), not the matter but its form, not the outcome but its condition, not the effects but their causes.
In the transformational-generative grammar by N. Chomsky, the two fundamental dimensions of language (Saussurian "langue" and "parole") are taken as "competence and execution." Competence is the knowledge of the rules that "allow the native speaker to associate phonetic interpretations (signals represented phonetically) with semantic interpretations" (Cheli, 2004), while the execution is the ability to use the knowledge of these rules.
An "urban text" is formed by a multiplicity of contexts characterized by a certain morphological structure that makes them recognizable (i.e., as "well-formed" grammatical sentences), or which allows one to recognize inconsistencies (not grammaticality); these textual units, in turn, are composed of syntagms, completed objects such as Architectural Units, which can be simple or very complex as regards their attributes and the relationships they have with other objects or events or

functions, and thus can assume a different weight in the arrangement of the relationship between deep structures (urban identity) and surface (intervention strategies).
In light of this "transformational-generative" approach, the presented model finalizes the cognitive and evaluative process – allowing the possibility to form coherent classes of building types and to assign the most appropriate Category of Intervention to each AU – to strategic planning.

This model:

- is generative because it defines and declares the rules for assigning Categories of Intervention to individual AUs;
- is transformational because recoursively recombines these rules by rewriting the expressions until one finds the most suitable to achieve the continuity of the historical city;
- is strategic because it organizes the rules previously described on the basis of criteria that are hierarchized by importance, and provides reasons and purposes for the most appropriate choice (of the expression).

The expressions produced by applying the "rewriting rules" can have a more descriptive or more connotative value. That is, they can employ the linguistic material in a more or less free way because of the lower or greater internal textual coherence of the AU and therefore of the greater or lesser need to impart new structural features, new functions, new distribution structures, etc.
The rewriting of the intervention strategy, such as an expression, consists in making it pass from the descriptive register (conservation) to those gradually more connotative, in order to create more densely communicative expressive forms (transformation).
As a result, the ability to optimize the strategy depends on the size of the range of what can be produced by manipulating the rewriting rules.

Thus, each expression is:

a) internally coherent because the same rules are applied to all the AU;
b) externally coherent because it is processed according to the same grammar.

The linguistic material, therefore, gathers around the syntagms, the AU as the minimal units of information, and unit recipients of the program prescriptions, the CI.
The typifying process defines the syntagmatic identity of the AU. Each of them is identified as a consubstantial set of object and property (D'Agostini, 2013), with respect to which it belongs to a species, the type.
An optimization process of the strategy, as mentioned, is iterative and consists in the production of multiple versions (expressions) which involve linguistic material differently; assigning different CI means imagining a different function for each AU: a conservative CI ("Restoration") requires that the AU has and must continue to have a predominantly "iconic" function having to enhance the current or original structural and formal characterization (more or less consistent with the availability of financial resources necessary to implement it) and not generically "sign" that is tied to the uses conventionally associated with an AU for which the modification of the intendend use and/or shape does not affect the internal relation between the signifier (its characteristics) and its significance (its value). This is the case of the transformative CI, in which the utilitarian and economic-real estate functions prevail over the symbolic-cultural ones, which, however, when belonging to the basic building types, the AU could still convey. This aspect is important because the transition from conservative strategies to transformative strategies "downgrades" a gradually increasing number of AU from the rank of icons to that of sign.

3.3 Structure of the evaluation and planning analysis process

Although not prescriptive, the attribution of CI to the AU is a topical stage in the programming of the building activity in historic centers, due to the potential impact on the formal, functional, and economical structure of the urban fabric.

The extremes within which a similar programmatic structure spans are the restrictive one (predominantly conservative) suitable for contexts with a high value density and tension in prices, and the deregulated one (predominantly transformative) suitable for the most degraded parts with low location tension where the prevalence of costs on prices discourages conservation work and whose incentive, with wider exploitation opportunities, exposes the urban landscape to the risk of a radical change.

As a result, the unification of the rules for the allocation of CIs (regardless of the purpose of the program – conservative or transformative) legitimizes the plan in terms of transparency (Elgert, 2018) and equity then validating the management of equalization and compensatory processes (Carbonara and Torre, 2008).

Hence, the building activity planning has been modeled by means of logical functions that sort among the different CIs each AU according to its characteristics whose attribution has been strictly formalized in order to minimize, especially in an extended and heterogeneous context, distortive subjectivism. Accordingly, the exercise of discretion, meaning discernment, which is the constitutive function of judgment (of value), is located upstream (*i.e.*, at the level of the construction of rules) so that the judgment of value can be considered, and in the proper meaning, generally valid. This does not exclude, indeed it encourages, the feedback that the critical evaluation of the results exerts on the rules, making the precedure perfectly circular in accordance with the concept of "revisable truth" (D'Agostini 2011).

The evaluation of the results (*i.e.*, the comparison of the strategies formed by progressively releasing the conservative constraints) provides information about the overall structure of each alternative in quantitative terms – physical and monetary – and qualitative terms. For example, in regards to the volume added in the case of progressive extension of the modifying CI, as regards the overall economic convenience (ratio between the real estate market value surplus and the cost of intervention), and in regards to the surplus of cumulative value from the point of view of the technological and morphological characteristics. The above described characterization of AU therefore falls within the linguistic frame exposed before occupying the most specific semiotic area that governs the semantic estimation "value/character"; this relationship is defined in qualitative terms, by means of attributes specified among a number of defined criteria, and quantitative monetary terms, as for the intervention costs and market values. Consequently:

- in the analysis phase, the AUs work as "referents", predominantly occurrences described as to their geometric components and materials;
- in the characterization phase, the AUs acqiire the status of "signifiers" since the terms and conditions of comparison - with respect to which it is possible to assign them a significance, i.e. a value - are defined; value manifests itself in three forms: cost, price, and merit - depending on the CI assigned.

The three types of value are:

- *independent* in the programming phase, in the sense that the allocation of the CI does not take into consideration costs and prices;
- *interdependent* in the stage of choosing the strategy that maximizes the multi-objective function, since, among the objectives, the economic convenience is compared in importance with the morphological, environmental, and functional convenience.

In fact, while the allocation of CI enables the vertical link between signifiers and significances (characteristics and values), that is the internal semantic relation with the sign (the AU), the choice of the strategy enables the horizontal link between the signs, namely the syntactic relationship which returns to the urban fabric the status of the "semantic field" in view of its "identification", *i.e.* the enhancement of its identity.

3.4 The model

As anticipated, the model allows us to assign, to each AU, a CI combining intentionality (more conservative or transformative) of the decision maker and identity (set of features) of the AU. The model assigns the CI according to logical conditions whose modification may be intended to modify the overall allocation of the CI and then to assume a plurality of configurations, each corresponding to a strategy, characterized by a more or less high degree of protection. Four further complementary modules are associated with this main core:

- the first presides over the assignment of each AU to a Building Type (BT). 22 have been identified;
- the second allows the calculation of the costs associated with each CI for each AU and for each TE;
- the third is used to determine the AU real estate market value with and without intervention, to calculate the differential asset value resulting from the application of the specific CI;
- the fourth is a simplified Multi-Attribute Value Theory model aimed at assessing the different strategies outlined, first indicating the conditions based on which the conservative or the transformative ones are preferable, second choosing the one matching the decision-maker's perspective, or defining it by progressively adjusting the constraints.

3.4.1 Generation of strategies and assignment of categories of intervention

The model allows us to form a multiplicity of Intervention Strategies, IS (in this experimentation 15 have been formed) graduated from the most restrictive (the one that admits only CI "Maintenance" and "Restoration") to the more "expansive" which admits a high number of AU transformative CI are applyed to, like "Renovation", "Demolition with reconstruction", "Cubage integration."

Every CI constitutes a set which each AU belongs to because of the attributes assigned to it according to the characteristics contained in the database through specific logic functions (*if ..., then ...).*

Each AU is assigned to a Category of Intervention CI_{hk} – where *h = (1,2,...5)* is the number of Ci groups (1. Ordinary Maintenance, 2. Extraordinary Maintenance, 3. Renovation, 4. Demolition and Reconstruction with or without cubage increase, 5. Restoration), while *h = (1,...,3)* is the level of AU maintenance state (according to which a soft, medium, hard intervention is expected) – on the basis of a set of constraints assumed as representative of a higher-level system of values V, and having a dual nature and function, $\vec{v}_g,\ g = (1, 2, \dots, m)$ qualification, and $\bar{v}$ access:

- $\vec{v}_g$ is a vector which contains the requirements that an AU must have to access the specific CI: *e.g.*, for the *Restoration: type, building age, architectural quality, testimonial value*; for each of these requirements is defined a threshold below which AU does not belong to CI, respectively: "palace", "before 1950", "medium", "medium"; the AU may not meet all requirements;
- $\bar{v}$: is the minimum number of requirements that must be met for the AU to access the CI.

The generic AU accesses a specific CI, if the following is true:

$$CI \leftrightarrow \exists i_1, \dots, i_k (k \leq t, t \leq 1) \mid b_{i_j} \geq \bar{v}_{i_j} \forall j = 1, \dots, k \qquad (1)$$

Where $\bar{v}_{ij}$ represents the threshold for the jth criterion, k is the number of criteria by means of which $\bar{v}_{i_j} \geq t_{i_j}$ is verified, *t* is the minimum threshold and, Gm is the CI sorting.
It is possible that AU meets the requirements to belong to more than one CI: in this case the highest CI in Gm prevails: the CI of Gm can be ranked by the most conservative or transformative according to the overall approach outlined by the decision maker.
Accordingly, a strategy is defined by the combination of the system of constraints that, gradually released, admit the AU to the different CI.
By variously composing the assortment of constraints, it is possible to give rise to a multiplicity of strategies each of which is characterized by a different profile, defined in terms of the degree of compliance to four axiological matrices: Landscaping, Identity, Functional and Economic as explained further below.
For this purpose, the functions of the model contained in the other four modules are enabled as aforementioned and described below.

3.4.2 Definition of building types

The definition of Building Types (BT) is twofold: on the one hand, dissecting the sample into categories, from a morphological point of view, to monitor how and to what extent these are affected by the different effects of the IS formation, an aspect whose outcomes cannot be described here for reasons of space. On the other hand, it is used to determine the parametric costs necessary for the calculation of the costs of intervention on the AU by virtue of the CIs applied to them.
This second purpose has required a subsequent study and was carried out by combining: morphology (palaces, mansions, basic historical construction, recent construction), number of exposed façades (one to three), number of floors above ground (from one to five), type of roof (terrace, mixed, sloping). The AU have been grouped in 22 BT (Figure 5a, localization of building types, Figure 5b exemplification) the characteristics of which provide different parametric costs for equal IC due to the different incidence of the different components, structural, finishing, roof and facade;

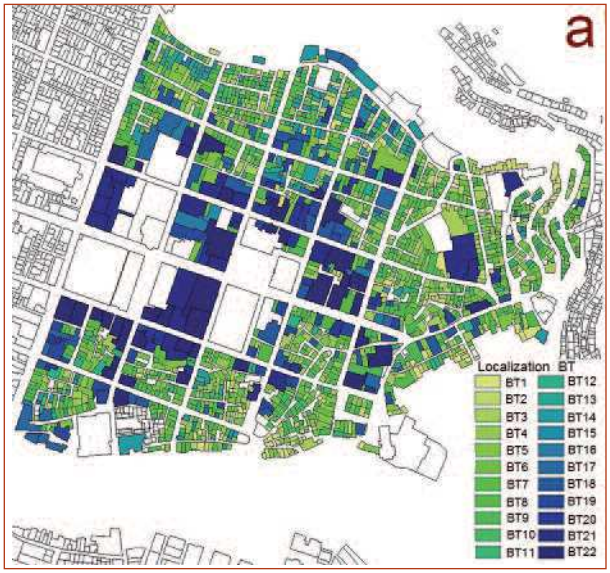

Figure 5: a. Localization Types Building Permits

Figure 5: b. Illustration Types of construction

Figure 6 shows the distribution of BT in a mapping for transport profiles.

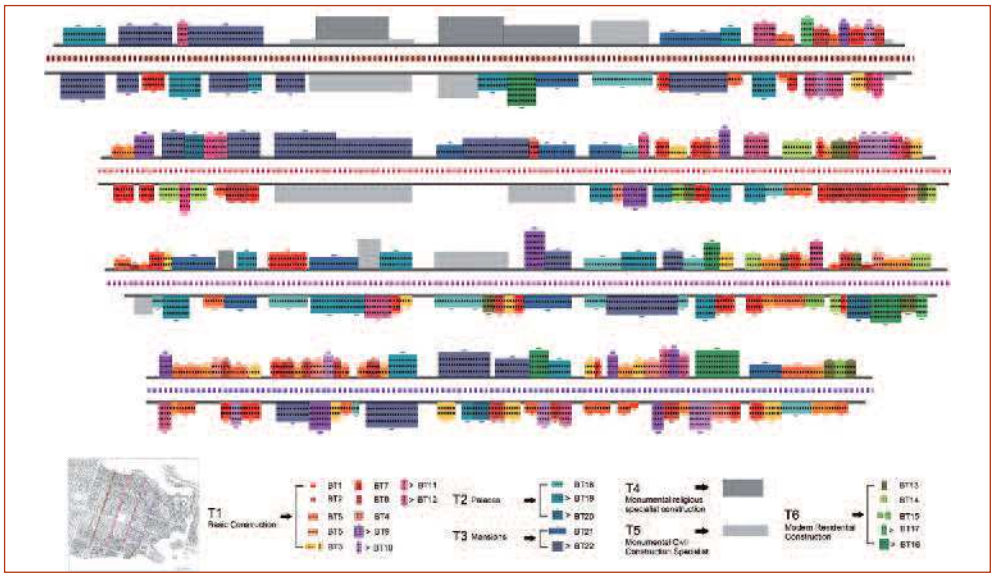

Figure 6 Mapping Types of Building roads in profiles

Figure 7 shows the distribution of the sample among the 22 BT.

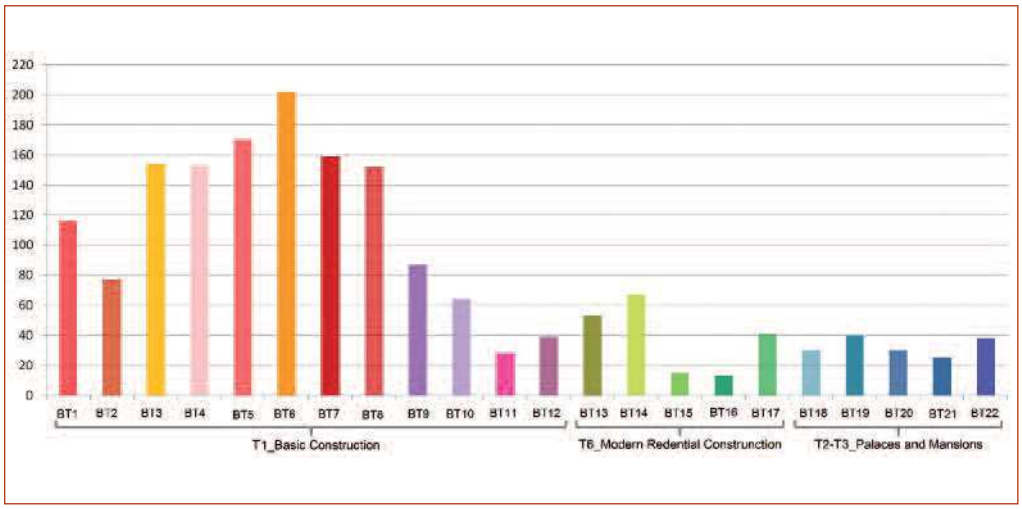

Figure 7 Sample distribution between different types of construction

3.4.3 Parametric cost analysis

Parametric cost analysis is a widely used practice in building programming (Fattinnanzi, 1992). It is usually based on statistically significant evidence and is conducted both on the basis of traditional statistical inference models, such as the multiple linear regression, as with advanced models of relational calculus, such as neural networks, case-based reasoning (Gwang *et al.*, 2004), and hybrid methods based on large amounts of historical data as in the case of large building projects (Hyung *et al.*, 2012).

In the present case, concerning an urban area characterized by a significant degree of typological heterogeneity, and in the absence of statistical evidence, an *ad hoc* analytical calculation model has been formalized based on the previous typification of buildings and CIs, which uses the summary estimate of the costs based on the Regional Price List of Public Works of the Sicilian Region.

The five main categories of intervention were divided into three groups by their degree of intensity, based on the state of preservation so as to obtain 15 different categories of intervention and by increasing cost from the surface Ordinary Maintenance, until Demolition with Volumetric Reconstruction, and Cubage Integration.

As shown in Figure 8, all the works subtended by the interventions required have been provided for by different categories of intervention (left columns), and the percentage has been graduated according to the CIs and the state of conservation (central block with percentages in correspondence to the different CIs and a gradually darker shade).

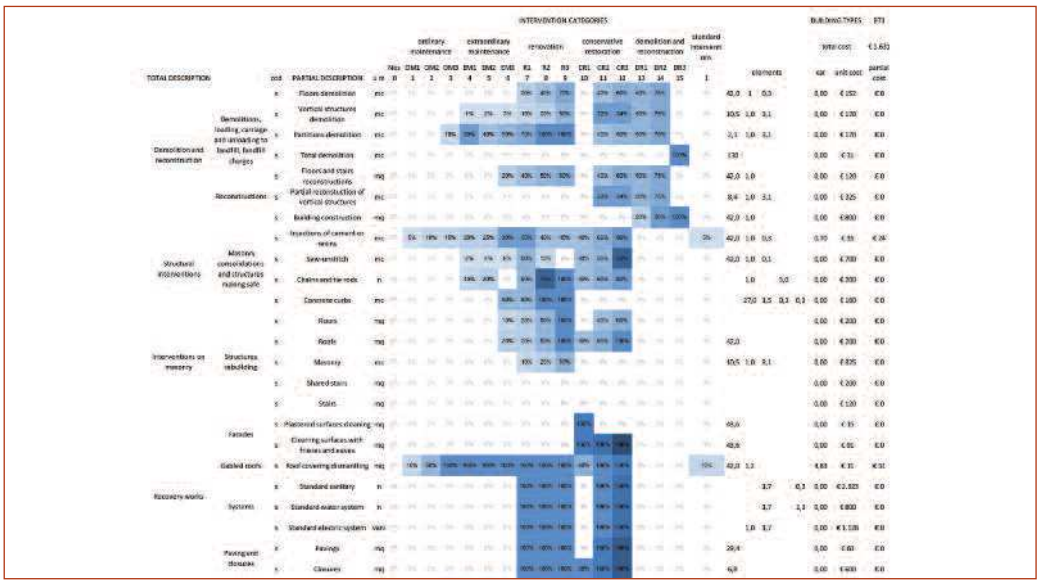

Figure 8 Excerpt of the module for the calculation of the parametric construction cost of each type for each Category of Intervention

For all 22 BT the total costs and the related parametric costs have been calculated: the 22 types intersect the 15 CI forming a matrix of 22 rows and 15 columns containing 330 different unit costs (Figure 9).

BUILDING TYPES	CATEGORY OF INTERVENTION														
	MO1	MO2	MO3	MS1	MS2	MS3	R1	R2	R3	RE1	RE2	RE3	DR1	DR2	DR3
BT1	€ 39	€ 91	€ 120	€ 225	€ 276	€ 356	€ 405	€ 563	€ 682	€ 524	€ 696	€ 1.056	€ 423	€ 634	€ 806
BT2	€ 32	€ 74	€ 96	€ 184	€ 235	€ 315	€ 357	€ 502	€ 622	€ 406	€ 571	€ 875	€ 423	€ 634	€ 806
BT3	€ 32	€ 56	€ 77	€ 150	€ 194	€ 260	€ 342	€ 492	€ 622	€ 369	€ 587	€ 891	€ 423	€ 634	€ 806
BT4	€ 26	€ 42	€ 57	€ 117	€ 160	€ 226	€ 304	€ 443	€ 574	€ 274	€ 488	€ 749	€ 423	€ 634	€ 806
BT5	€ 33	€ 69	€ 91	€ 173	€ 218	€ 291	€ 362	€ 517	€ 651	€ 403	€ 620	€ 941	€ 423	€ 634	€ 806
BT6	€ 27	€ 55	€ 72	€ 140	€ 185	€ 258	€ 323	€ 469	€ 602	€ 308	€ 520	€ 797	€ 423	€ 634	€ 806
BT7	€ 26	€ 50	€ 66	€ 132	€ 176	€ 244	€ 319	€ 463	€ 594	€ 296	€ 515	€ 787	€ 423	€ 634	€ 806
BT8	€ 31	€ 63	€ 84	€ 162	€ 207	€ 276	€ 354	€ 506	€ 637	€ 380	€ 604	€ 916	€ 423	€ 634	€ 806
BT9	€ 32	€ 60	€ 81	€ 159	€ 205	€ 271	€ 356	€ 509	€ 639	€ 386	€ 609	€ 922	€ 423	€ 634	€ 806
BT10	€ 26	€ 45	€ 60	€ 123	€ 168	€ 234	€ 315	€ 457	€ 587	€ 283	€ 504	€ 771	€ 423	€ 634	€ 806
BT11	€ 26	€ 49	€ 65	€ 130	€ 175	€ 239	€ 322	€ 467	€ 598	€ 301	€ 521	€ 794	€ 423	€ 634	€ 806
BT12	€ 31	€ 61	€ 82	€ 161	€ 206	€ 273	€ 357	€ 510	€ 640	€ 383	€ 608	€ 921	€ 423	€ 634	€ 806
BT13	€ 26	€ 41	€ 56	€ 114	€ 158	€ 225	€ 301	€ 439	€ 567	€ 266	€ 480	€ 739	€ 417	€ 625	€ 804
BT14	€ 29	€ 50	€ 68	€ 135	€ 180	€ 248	€ 326	€ 470	€ 599	€ 324	€ 543	€ 830	€ 417	€ 625	€ 804
BT15	€ 26	€ 48	€ 64	€ 127	€ 171	€ 238	€ 313	€ 454	€ 584	€ 283	€ 499	€ 764	€ 417	€ 625	€ 804
BT16	€ 26	€ 49	€ 65	€ 136	€ 185	€ 256	€ 338	€ 485	€ 612	€ 312	€ 541	€ 831	€ 417	€ 625	€ 804
BT17	€ 28	€ 47	€ 64	€ 132	€ 178	€ 247	€ 328	€ 473	€ 600	€ 313	€ 537	€ 823	€ 417	€ 625	€ 804
BT18	€ 26	€ 54	€ 71	€ 140	€ 180	€ 251	€ 308	€ 453	€ 587	€ 323	€ 525	€ 800	€ 429	€ 643	€ 809
BT19	€ 25	€ 51	€ 68	€ 135	€ 175	€ 243	€ 308	€ 451	€ 582	€ 318	€ 527	€ 800	€ 429	€ 643	€ 809
BT20	€ 21	€ 40	€ 52	€ 108	€ 149	€ 217	€ 280	€ 416	€ 547	€ 237	€ 450	€ 691	€ 429	€ 643	€ 809
BT21	€ 22	€ 45	€ 59	€ 126	€ 172	€ 250	€ 334	€ 448	€ 578	€ 372	€ 545	€ 838	€ 446	€ 669	€ 818
BT22	€ 22	€ 43	€ 56	€ 123	€ 169	€ 243	€ 323	€ 447	€ 577	€ 343	€ 534	€ 818	€ 446	€ 669	€ 818

Figure 9 Matrix parametric cost of Building Types intervention by Category

3.4.4 Property Values

In order to delineate the economic-real estate profile of each possible IS, a specific function has been prepared to calculate a specific market value of the AU belonging to the sample, to enable a comparison with the intervention costs, both of which vary according to the specific CI applied. This module is used to evaluate which combinations of AU and CI generate a real estate market value surplus able to compensate (and exceed) the intervention costs, given that this happens with certainty in the case of CIs that suppose an increase in volume.

To this effect, a market survey was carried out on two samples of 75 properties for sale and 55 for rent in the historic center of Ragusa Superiore, described by 37 attributes expressed in a standard scale of 1 to 5, grouped into five characteristics – extrinsic k_e, intrinsic k_i, technological k_t, productive k_p, and architectural k_a (Forte, 1968) – and then turned in standard Z-scores.

For the purposes of an early representation of the significance of the sample, the scores of the five characteristics were aggregated, obtaining an overall quality index k*, a weighted average score compared to the coefficients of the multiple linear regression function that characterizes the sample. The representation also includes the size of the properties in order to highlight the effect of the size of the properties on the unitary value (Figure 10a).

A subsequent deeper analysis regards the probability density function of k* of the unit prices and the specific k that represents the way in which the heterogeneity of the sample grows as the classes of the above values thicken (Figure 10b).

The af orementioned multiple linear regression function is used to calculate the market value of every AU in both the actual state and, subsequently, in the state corresponding to the application of the assigned CI.

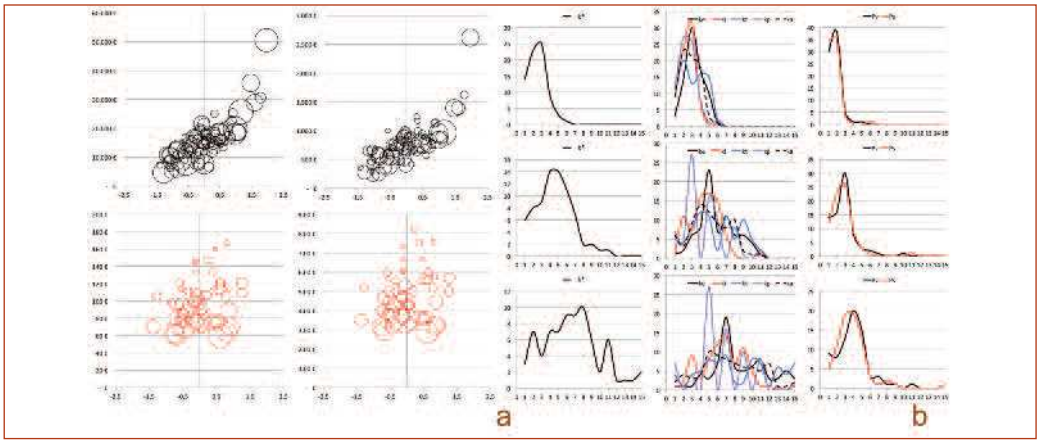

Figura 10: a: Relationship between quality index and price (top) and between a quality index and a compartment unit monthly rents and sq.m (bottom)
b: Probability density functions with different intervals: aggregate quality index (first column); disaggregated characteristics (second column); prices per room and price per square meters (third column)

3.4.5 Evaluation and Optimization of the Intervention Strategy

An "adaptive framework" is now at our disposal (Kyrkou and Karthaus, 2011) which includes all the tools to design a strategy (§ 3.4.1) and calculates, in real time, the total cost based on the parametric costs for building type (§§ 3.4.2-3.4.3), the real estate market value surplus (§ 3.4.4) and the qualitative values in terms of the main characteristics of the single AU, in the current state and in the situation following the intervention indicated by the assigned CI.

It should be noted that the quantitative and qualitative characterization of the effects of the CI applied is attributed in a dedicated section of the model in which, next to each of the columns that show the AUs characterizations, there is a column whose cells incorporate the information of the CI applied and provide a consequential attribute.

Exemplifying the whole process starting from the current state: in the case of a marginal AU – of recent construction, peripheral localization, low architectural value, insufficient technological equipment and maintenance status not used, consistency equal to one elevation above ground – by releasing the constraint related to the possibility of increasing stand volume, the model attributes the CI "Demolition with reconstruction and cubage integration"; two subordinate constraints control the extent of this integration, the first concerning the number of permitted additional elevations, the second concerning the number of total permitted elevations.

Needless to say, a more expansive intervention program can be delineated by releasing the two subordinate constraints in order to allow the demolition and reconstruction of a building of equal surface area, for example up to three elevations above ground.

The cubage increase and the consequent surface area of the new AU are shown in columns next to those that describe the consistency of the AU in current state. Similarly the project columns are next to those of the current state related to the intrinsic, technological, and architectural characteristics indicating the information and the "functions if ..., then ..." presenting the new scores corresponding to the configuration of a new AU with a number of floors such as to be more suitable from the functional point of view and intendend use, more panoramic, bright and safe, and of medium-high architectural quality according to the rules of the plan.

The parametric costs module attributes to each AU the cost corresponding to the combination of CI and TE, which, multiplied by the new surface area, provides the total cost.

The module for real estate appraisal reflects the information on design features, which correspondent expected real estate market value are associated to; the latter can be compared with the sum of the initial property value and the intervention cost in order to appraise the surplus, in all likelihood positive in the case of transformative CI, negative in the case of conservative or binding CI.

The same reasoning extends to the scale of the context as regards the more or less expansive strategy as a whole, where it assumes a greater regulatory function, constituting the support for the implementation of redistributive policies by means of local fiscal measures.

The strategies generated through the combination of the constraints can be compared on the basis of all these elements according to the logic of the Multi-Attribute Value Theory. Each strategy is evaluated from the consideration of the four main axiological matrices, *Landscaping*, *Identity*, *Functional*, and *Economic*, characterizing the unity of the urban system, taking into consideration, for simplicity, some typical indicators.

The impact on the *Landscape matrix* is evaluated based on building density, a term with respect to which it controls the extent of the transformative CI, which provide cubage increases.

The impact on the *Identity matrix* is assessed based on the presence of typical facades and roofs and on the percentage of the AU of the sample to which a conservative CI is associated (Maintenance or Restoration).

The impact on the *Functional matrix* is valued according to the overall size of the AU and the technological level that depends on the combination of the degree of transformation and maintenance status.
The impact on *Economic matrix* of each CI on a single AU – and consequently of each strategy on the entire urban context – is assessed based on the total revenue-cost margin, expected as a result of the implementation of the strategy.
Every CI includes works whose cost may or may not be compensated by the increase in market value due to improved technological and architectural characteristic, and to the increase in volume where supposed.
Thus, the proposed model constitutes the basis for the implementation of the strategy that, with the same qualitative value, is preferable in terms of cost-effectiveness.
Moreover, within an equalization process, the knowledge of the economic surplus allows the possibility to discuss the compensation processes aimed at the internalization of context externalities which proposes the question, again, of the distribution of the surplus of value generated by the urban regeneration policies.

4 | RESULTS AND DISCUSSION

Some results of this experiment, determined by generating 15 strategies, can indicate the potential of the model that easily allows the mapping of the CI indicating the effects of the progressive release of the constraints on each AU according to its specific characteristics and conditions, displaying the distribution with respect to the urban structure and central areas. Figure 11 shows the location of the CI of the strategies 3, 5, 9, and 13.

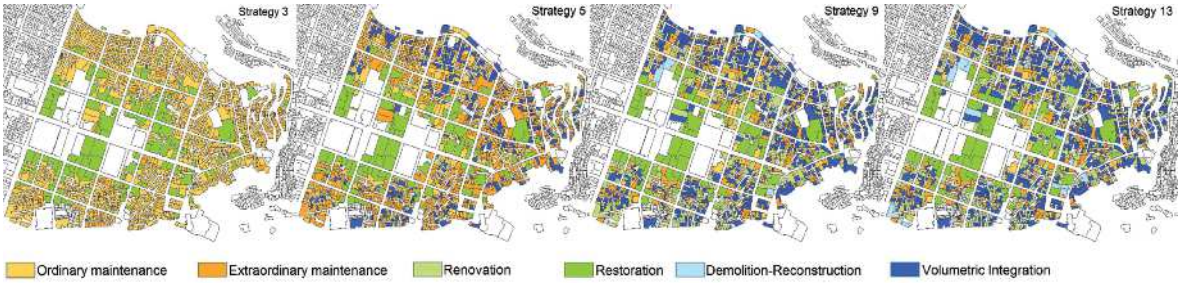

Figure 11 Distribution of Intervention Categories (Strategies 3, 5, 9, 13).

The progressive "populating" of the sample by the CI supposing cubage increase can be further monitored by mapping the resulting cubage increase capacity for the same strategies (Figure 12).

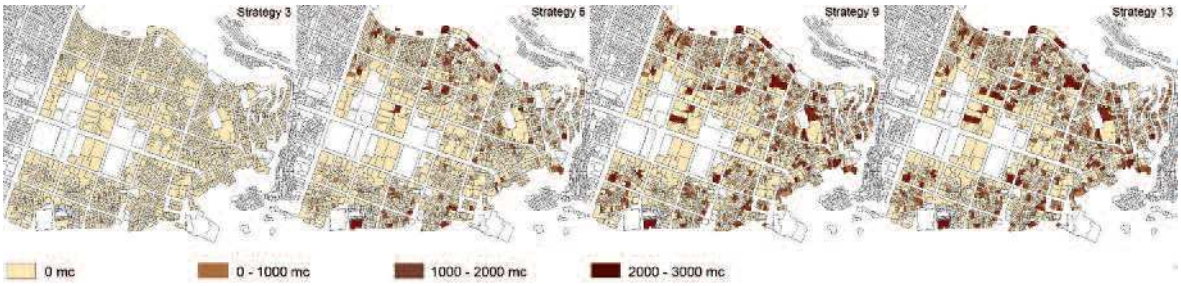

Figure 12 Map of the building consistence (mc) (Strategies 3, 5, 9, 13).

It is possible to verify the variation of qualitative characteristics, such as technological quality (Figure 13), architectural quality (Figure 14) and overall quality (Figure 15).

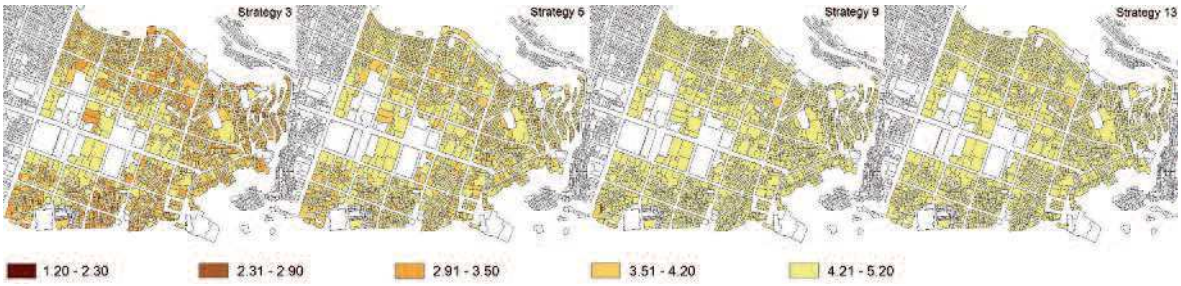

Figure 13 Map of the technological quality (strategies 3, 5, 9, 13).

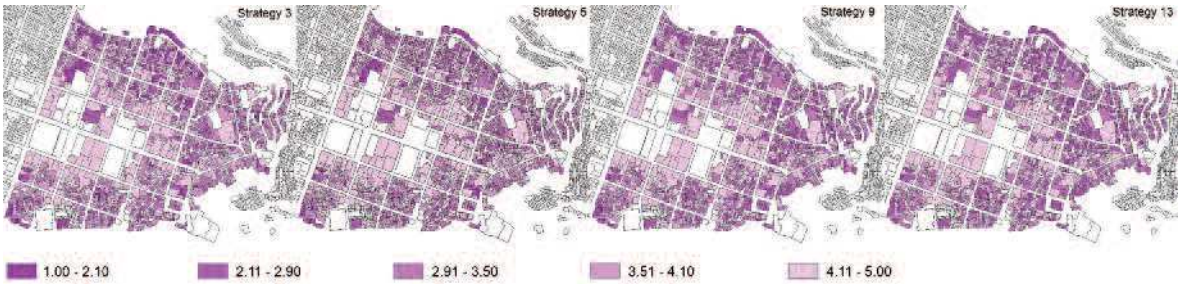

Figure 14 Map of architectural quality (strategies 3, 5, 9, 13).

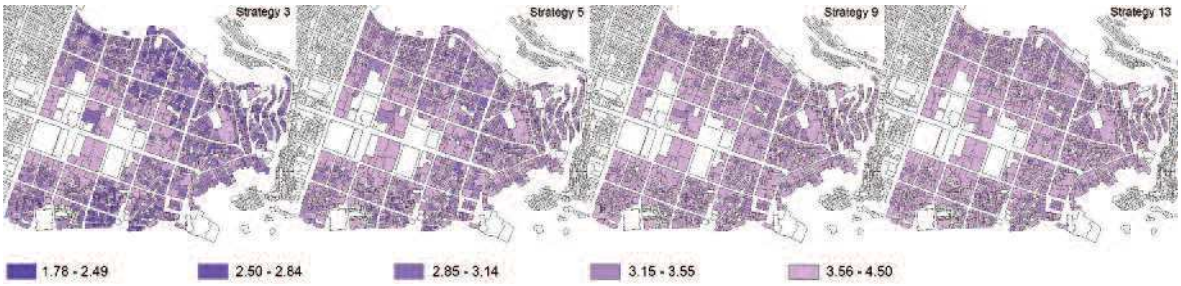

Figure 15 Map of the overall quality (mc) (Strategies 3, 5, 9, 13).

From the comparison of the three projections, it is noted that while the technological characteristics grow overall as the transformation increases, the architectural features, which also take into consideration the testimonial quality, remain almost constant, while recording a definite improvement in the overall quality only with IS 5, much more modestly with IS 9, and almost imperceptibly with IS 13, since even the intrinsic characteristics are negatively affected by the increase in volume and in general the identity value tends to decrease.

An analysis of the overall costs of IS and CI (Figure. 16a) shows the discontinuity of the overall growth of the total costs and the gradual redistribution between the various CI; furthermore the probability density functions (Figure. 16b) show the progressive sliding "by groups" of unit costs of the different strategies towards greater values.

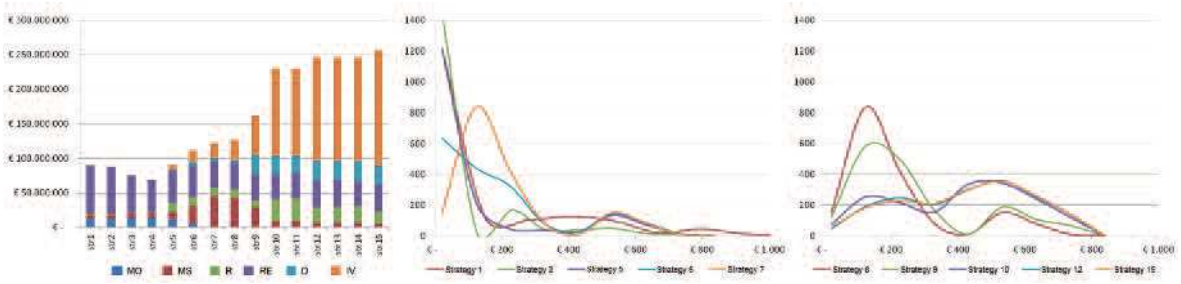

Figure 16 Sx: Entities and distribution for Strategy and Category Intervention costs
Dx: the probability density functions of the unit costs by strategy

A final verification concerns the economic convenience calculation here synthesized first by comparing the effects of the different SI in terms of percentage increase of the market value ΔV/V (Figura 17), then the relationship between the increase in the market value and the intervention cost ΔV/C (Figure 18). It goes without saying that the initial property value is in general a greater amount of the redevelopment cost; consequently, again with reference to the four sample strategies, the probability density functions of the ΔV/V are completely asymmetrical and less prone to flatten and move right.

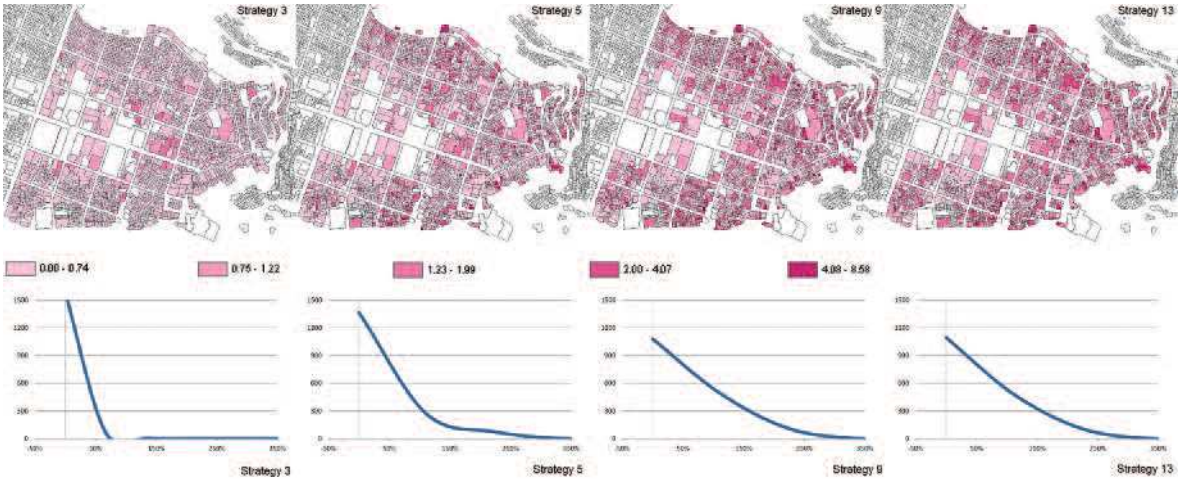

Figure 17 Map of the increase in market value (%) and the probability density functions (Strategy 3, 5, 9, 13)

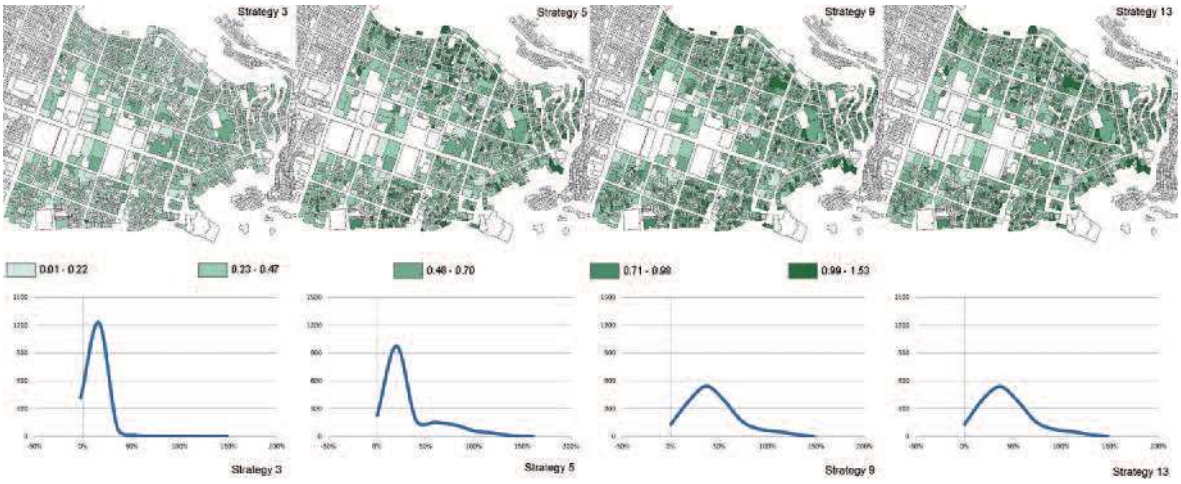

Figure 18 Map of the relationship between the market value increase and the cost of intervention (%), and probability density functions (Strategies 3, 5, 9, 13)

The prospect of a surplus of real estate value on redevelopment cost constitutes a valid argument as for the possibility to redistribute this *surplus* in order to incentivize interventions for which this surplus is insufficient, zero or negative, supporting the application of conservative CI and in particular the binding ones.

The results have been extended from the individual interest scale (and therefore the consent of the subject advantaged by the strategy implemented), up to the scale of the collective value and hence to the overall feasibility of the program (Carter and Roberts, 2017).

The last of the model application results is the comparison and selection of the best among the 15 proposed strategies. The modification of the characteristics of the AU as they move from conservative CI to those transformative allows an overall and concise evaluation of each of them with respect to the four previously mentioned matrixes: each strategy is described by a vector of four variables scores on a dimensionless scale.

A model was subsequently constructed to describe the trade-off or convergence relations between the four matrices, as described in Figure 19, which also demonstrates the choice of the strategy that maximizes the objective function (the maximum surface of the rectangle which combines the points on four diagrams) and which favors identity and landscape aspects.

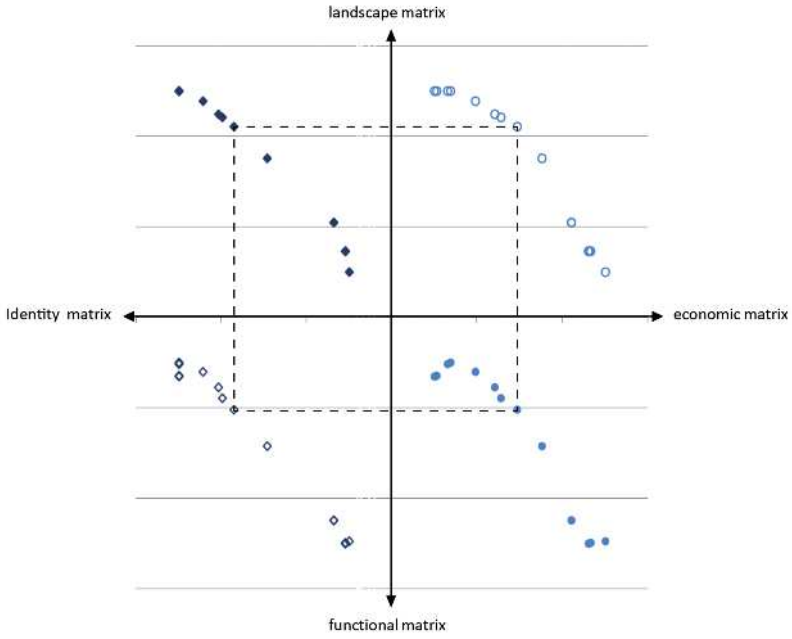

Figure 19 Evaluation of the strategies; trade-off between the four axiological matrices; Choosing the best strategy.

5 | CONCLUSIONS. SIGNS, SYMBOLS AND ICONS; NEW HIERARCHIES OF URBAN FABRIC

The axiological approach applied and proposed here has shown how value and evaluation matters have been placed at the center of the representation of the architectural heritage of Ragusa Superiore, reversing the traditional linear approach – from the data to the project – having the potential to generate a multiplicity of strategies, along a direct path, from conservation to transformation; this process has had a significant heuristic impact on increasing the knowledge of the relationships between characterization, evaluation, and project outcomes and between detailed and global assessments. The approach was conducted by transforming activities traditionally intended as *analysis*, *evaluation*, and *design*, which are to be inscribed in the general category of judgment of *fact, value, and merit*. This is due precisely to the close motivational connection in the functioning of the model that makes them integral and indistinguishable. Consequently, the circular relationship between the three judgments allowed the testing of both the traditional meaning of the link between evaluation and project (evaluation as a project tool) and the more current "project as an evaluation tool," as recursive activity that describes the ability to be worth of a system adequately described and identified.

Consequently, the possibility of forming recursively different strategies as to degree of protection has made it possible to distinguish the AU based on their "resistance" or "acquiescence" to convert from one CI to another.
In that respect, accepting the project as an assessment tool means exploring the possibilities that an object has to generate new values through ideational elaboration.

In this regard, the generation of strategies has allowed the association of each AU with notions of *sign*, *symbol*, and *icon*, in a "*crescendo*" of strategic importance in the urban fabric.

The sign is characterized by the fact that the relationship between the signifier and the significance is conventional and thus hetero-referential. While, on the contrary, an icon is a particular sign whose significance is expressed by itself, hence being self-referential: an icon stands for itself, while a sign stands for something else. A symbol (Soletti, 1994) is a particular sign that stands for something that transcends it, therefore only in this sense it can be considered "other"; as such, it can be considered an intermediate entity between sign and icon, neither totally self-referential nor hetero-referential.
The AU have been classified into signs, symbols, and icons by exploring the qualities of the sample through the generation of strategies. They have been classified according to their ability to maintain, despite the gradual release of the constraints, the original CI, conservative, or rather to move on to the subsequent, more or less transformative, ones. (Figure 20)

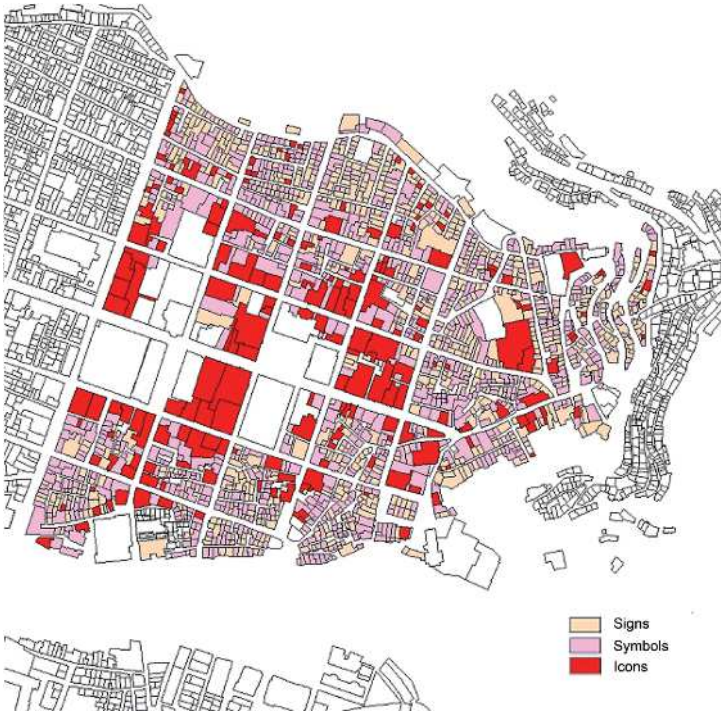

Figura 20 Identificazione di segni, simboli, icone

This classification correlates characteristics of the AU and IS and is therefore the culmination of the evaluation process completed here; it stands, therefore, as a topical moment for the articulation of compensatory and equalizing approaches, because: the AU-icon will be the target of projects of public interest, attracting a significant portion of the overall economic surplus (revenue-costs) with capital financing and partnership mechanisms with a public component, predominantly; the AU-symbol will be the target of forms of transfer of property rights for which the surplus between revenue and costs deriving from the application of more profitable categories of intervention is intended to finance the implementation of the less profitable ones. At last, the AU-signs will make possible the implementation of highly transformative experimental designs capable of generating surpluses in income and capital value, which can then be extracted for redistributive purposes.

As too often experienced, in the absence of surpluses external to the building-real estate sector, (*i.e.*, in the absence of a social surplus product coming from the real economy, capable of generating tax revenues to fund the public city) city planning over the last 25 years has resigned to search, among the "real estate voluptuousness", the energy for the urban redevelopment, once trapped in the meander of the expropriation *procedure*, and now hostage of the real estate return.
Like all tools, this model should be taken into consideration based on the general aims of the building activity program in the old towns, with respect to which it is able to raise public intelligence above individual interest.
Having here extended to "impossible" limits the conditions of the programming by producing strategies that are placed at the extremes of the "values-interests range" was an important heuristic exercise that has raised the awareness that the future of the historic centers lies in the combination of their "iconicity" and the recovery of socio-economic conditions for the production of flows of wealth a significant part of which can be immobilized into the architectural heritage, as a status symbol rapresented by "the house in the historic center".
To this end, the exploration of semiotic-estimation connotations (Rizzo, 1999) of the architectural heritage of this part of the city indicates in the stratification "sign-symbol-icon", one of the possible forms of the new urban hierarchies in the contemporary era, the hyper-modern age.

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