

## Informalities as Resistance: Case Study of a Middle-Class Housing Neighborhood in Rabat, Morocco

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### Abstract

The urban landscape of housing in Africa generally and Morocco specifically is largely affected by informalities of housing. The purpose of this study is to assess the impact and drivers of these informalities on the architectural-urban scale. To achieve that, we investigate a private neighborhood comprising single-family row houses each with a private courtyard/garden located in Harhoura, Rabat. Accordingly, the paper investigates three different Spatio-temporalities - authorization, construction, and contemporary periods. Therefore, the implemented mixed research method is a descriptive-normative one employed through an overlay of the urban facades of three periods analyzed by the use of a morphological analysis grid establishing technical outcomes further explained by a questionnaire-based ethnographic study. Hence, in addition to a plain unconformity between the three temporalities articulating institutional level, individual level, and combined informalities, the results express materialized needs of the residents through common, homogenous, and symmetrical patterns of informalities. Henceforward, this paper empirically sheds light on the informal urban dynamics of Morocco beyond the urban poor by stressing the aspects of spatial resistance towards the formal limitations.

**Keywords:** Morocco, housing, informality, Resistance

### 1. Introduction

#### 1.1. Background

Informal housing constitutes the majority of urban households in Africa (World Bank, 2015), with the remaining formal housing affected by patterns of urban and architectural informalities. The concept of the *informal* was institutionalized by International Labor Office (ILO), and ever since the early 70s has been studied and investigated in trans-dependency with formality (R. Bromley, 1978 (a), A. A. Davidescu et al., 2022; J. Beardsley, 2022), gaining more attention from scholars in the Global North and South due to its wide occurrence and impact. Historically, informalities of the housing sector start in Africa dating to the colonization and protectorate eras when little attention was given to the housing of the locals (G. A. Myers, 2003) and when models of vertical and horizontal housing for them were not accepted and therefore modified and transformed (A. Kurzbein, 2011). Morocco counts many of these vertical and horizontal housing models such as the *Carrières centrales* project by architect M. Ecochard (1905-1985), *Derb Jdid* by E. Azagury (1918-2009), and *Nid d'abeilles* by G. Candilis (1913-1995) and S. Woods (1923-1973). Likewise, inhabitants themselves used to and continue to transform many housing projects informally according to their needs. However, studies continue to focus on the dynamics of informal housing per se, such as slums and illegal housing, since the 70s (Tokman, 1978; AR Levenson and WF Maloney, 1998; Alter Chen, 2004 ; N. Alsayyad and Roy, 2004; A. Roy, 2005; Alter Chen et al., 2006; T. Goodfellow, 2016; P. Alfaro d'Alençon, 2018; Banks et al., 2020). Therefore, the subject of informalities of legal housing persists with major gaps to be grasped, such as its impact and drivers.

Accordingly, this paper focuses on the patterns of informalities over the formal architectural-urban layout and the socio-ethnographical motives behind it. Understanding both would bring a strong data basis for decision-makers to enhance housing regulations based on socio-technical evidence and materialized needs.

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Hence, we selected the case study based on an Information-oriented selection (Bent Flyvbjerg, 2006), a private middle-class neighborhood in Harhoura, Rabat, with three different Spatio-temporalities. The first temporality is the authorization period (the late 90s), the second, the construction period (mid-2000s), and the third, the contemporary one (early 2020s) permitting to understand two levels of informalities and their dynamics, the institutional and individual ones. The institutional informalities refer to the ones engaged by the housing association in charge of the administrative and construction tasks, and the individual ones state the modifications implemented by the inhabitants after the construction period. To detect the latter, the deployed research method is a mixed one, a descriptive-normative tracing three types of overlays permitting to grasp the three Spatio-temporalities, a normative analysis, a descriptive, and a combination of both. The normative analysis overlays the authorized urban facades (UFs) with the constructed ones. The descriptive analysis overlays the constructed UF's with the modified ones, with more than a decade and a half difference, and the combination of both overlays the authorized UF's with the contemporary ones, with two decades and a half difference. The reading of all three analyses is established upon a morphological analysis grid established from the incremental types of Dovey et Kamalipour (2020). We further explain the results of the normative-descriptive analysis by a questionnaire-based ethnographic study.

With a wide informal spectrum affecting the urban scene today in Morocco due to housing regulations not in tune with the needs of the inhabitants (AREA, 2003; IAU, 2010, F. Berrada et. al, 2016), the purpose of this work is to establish a state of the art of *how* and *why* informalities occur in a formal housing setting. Accordingly, the results could be used for contributing to remediating the global issue of architectural-urban informalities in Morocco. Furthermore, with an innovative set of methods established through a mixed research tools deployment, this paper brings an advanced way of looking at, listing, and understanding informalities of housing, in addition to the traditional existing methodologies, such as:

- Purely textual (V. E. Tokman, 1978; R. Hodder, 2016; R. Beier, 2021);
- Descriptive enhanced with in-situ photography (K. M. Phala et T. Gumbo, 2016);
- Descriptive enhanced with satellite imagery (J-L Van Gelder et. al, 2016);
- Descriptive enhanced with in-situ photography and satellite imagery (J. Galuszka, 2020);
- Descriptive enhanced with schemes (A. Panman, 2021);
- Descriptive enhanced with schemes and in-situ photography (H. Kamalipour et H. Dovey, 2020).

## 1.2. Literature Review

### The Informal – diverse perspectives

The five schools of thought related to the notion of the *informal* are *dualism*, *structuralism*, *voluntarism*, *reformism*, and *neoliberalism*. *Dualism* suggests a relationship of opposition and contrast (ILO, 1972, 1976; Tokman, 1978) i.e. that everything not formal is by definition informal. Hence, activities undertaken in a sector that is not (partially or fully) regulated are thus informal. Accordingly, H. Dietz (1989) uses *informal/illegal*, and *formal/legal* interchangeably, although this dichromatic vision is not only considered simplistic, as the reality of things is much more complex (J. Galuszka, 2020) but also, imaginary (R. Hodder, 2016). *Structuralism* advocates a relationship of subordination where the informal is subordinate to the formal. *Voluntarism* understands the informal as a voluntary privilege of choice because it does not involve taxes (AR Levenson and WF Maloney, 1998; T. Goodfellow, 2016). *Reformism* understands the formal and the informal as a strategy of territorial and ethnic control (N. Alsayyad and Roy, 2004; A. Roy, 2005). Finally, *neoliberalism* includes a relationship of consequence and reaction where the informal is the result of an administrative system that is quite rigid (JFC Turner, 1972). Indeed, this paper draws from this neoliberal school of thought in the continuity of recent research that has shown that inadequate formal framing generates architectural-urban informality in African countries (A. Panman, 2021; N. Mutsindikwa, 2021).

### The Informal as Resistance

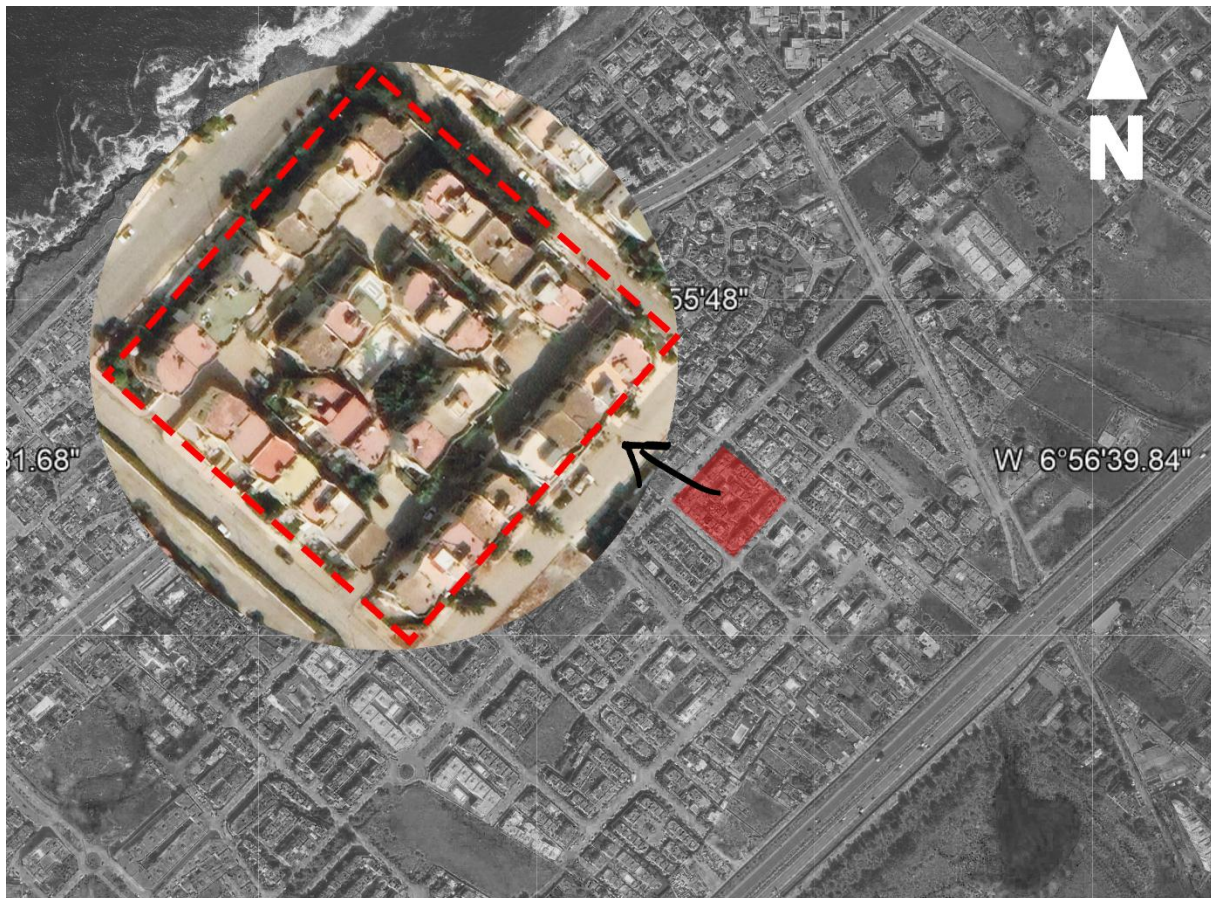
Researchers in the last decade (see A. Varley (2013, 2016), H.A. Tran et N.M. Yip (2017), and, M. J. Zapata Campos et. al (2022)) have been interested in the notion of *resistance* in relation to *informality*. The research trend of studying *informality* along with *resistance* refers to the rejection of formal architectural-urban models that does not necessarily fit the needs of the target population. Therefore, rules and restrictions are not respected, and, transformations are bound to occur even if proscribed. Indeed, in the specific context of informalities, resistance is referred to in its contemporary sense, as a refusal to align with regulations, and in no case an opposition against the state's authority as in its traditional socio-anthropological connotations (Ortner 1995; B. Florin, 2001).

Similarly, along with the *neoliberal* school, from the side of informality, administrative regulations are not in perfect tune with the needs and therefore trespassed (De Soto 1989, 2000). Hence, this paper addresses the issues of informalities of housing (S. A. V. Martinez, 2021, M. Zugayar et al, 2021) through the lens of the repeated patterns (H. Kamalipour et. K. Dovey, 2020) along with ethnographical explanations (D. Pinson, 1985, 1987(a), 1987(b), 1991, 1992, 1994)

## 2. Materials and Methods

### 2.1. The Neighborhood – Association Al Firdaous

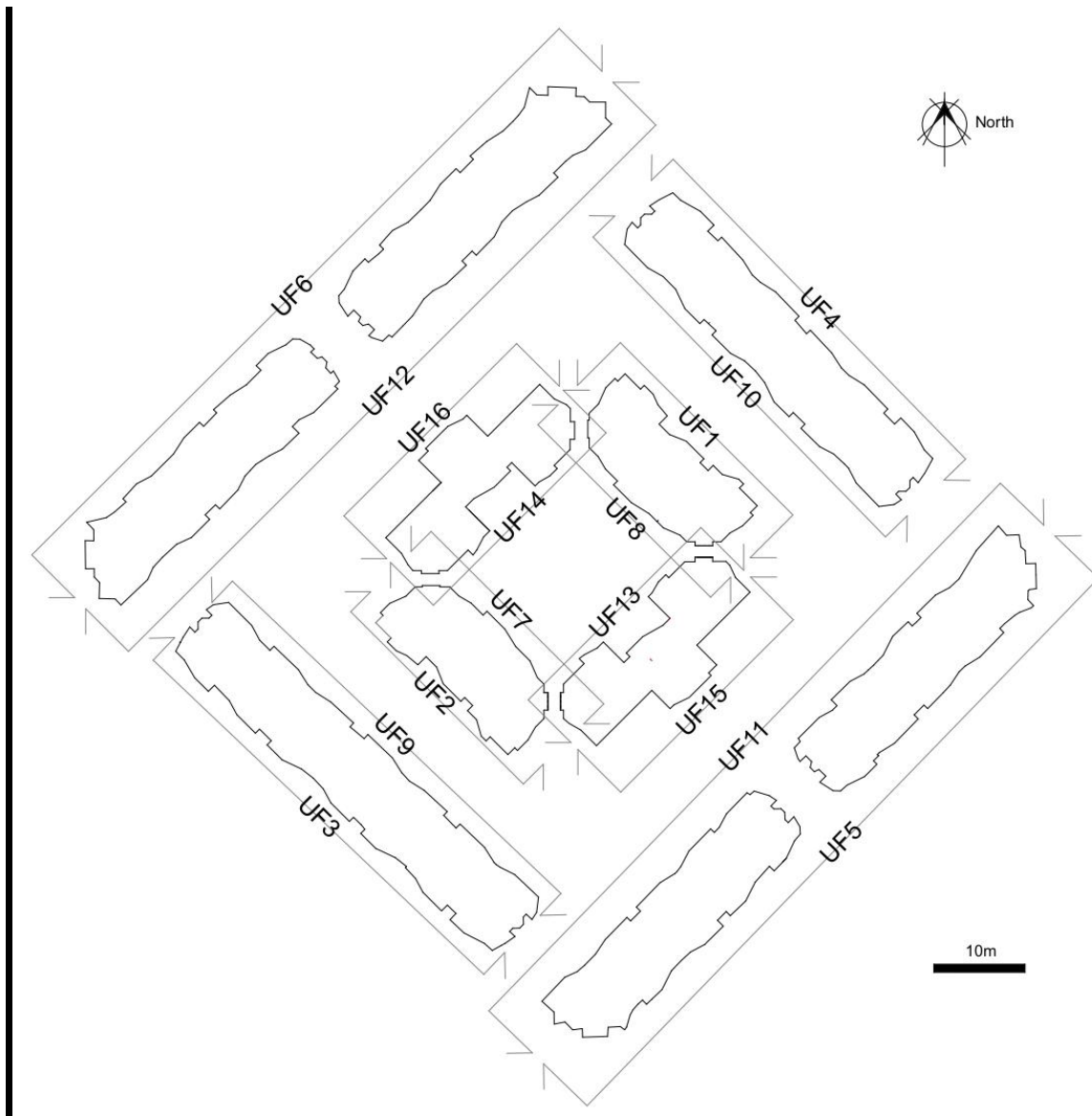
The case study is picked via an information-oriented selection (B. Flyvbjerg, 2006). It is a middle-class housing neighborhood located in Harhoura, Rabat, Morocco, composed of eight urban blocs, sixteen urban facades (UFs), of which the majority is symmetrical, and forty-five architectural units, constructed by a housing association. Three key dates mark the history of the residence and thus will serve as the major temporalities defining our study of informalities. The first in the late-1990s corresponds to the first authorization of the masterplan and architectural facades (AFs). The second of the mid-2000s corresponds to a rejected request for modifications, and the third the early-2020s, corresponds to the existing state and the period of our fieldwork. Accordingly, the first temporality corresponds to the authorization phase, the second to the construction phase, and the third to the contemporary phase.



**Figure 1.** Bird view of the housing neighborhood.

Institutionally, the neighborhood – Association Al Firdaous - is a housing association drawing its legal status from the Dahir n° 1-58-376 of 3 Joumada I 1378 (November 15, 1958) that generally organizes all Moroccan associations. The housing association as a group consists of individual members and an executive bureau. This bureau comprising a president, vice president, secretary general, vice secretary general, treasurer, vice treasurer, and counselor in charge of social affairs is legally in charge of the construction and all the legal and administrative responsibilities. The other members contribute financially to the construction of the residency and have rights of residential ownership equivalent to one housing unit composed of a ground floor and an additional floor.

The land of the residence belongs to the housing association, thus excluding it from being classified as informal housing, as according to Habitat International (1985), informal housing means illegal occupation(s) of land (also called self-help housing), e.g. slums, or organized illegal subdivision allotments. Rather, it is a formal housing presenting a wide set of informalities. As expressed in figure 1, the neighborhood is composed of four internal blocs generating eight UFs and four external blocs generating eight UFs as well. Accordingly, and for the upcoming analysis purposes, we have given the (UFn) nomenclature starting from UF1 to UF16. In total, the neighborhood is composed of forty-five architectural blocs of which 102 architectural façades (AFs) are subject to informality of housing investigation during the three different temporalities.



**Figure 2.** Outlines of the authorized Masterplan's UFs of the late 1990s.

## 2.2. Secondary data

Secondary data are composed of architectural plans and façades, in addition to legal documents of the neighborhood. Precisely, it consists of:

- The authorized masterplan of the whole neighborhood.
- The authorized masterplans and AFs' history of each architectural unit.
- Land ownership documents.
- The unauthorized masterplans and AFs history of each architectural unit.

### 2.3. Primary data

Primary data for our study were constructed from fieldwork organized between February and August 2022. Principally, this consisted of two types. Data to describe the existing state of the Al Firdaous housing is referred to as Descriptive-normative data. The second layer of primary data collected were ethnographic in nature. All primary data collected were anonymized as much as possible to protect the privacy of participants.

#### 2.3.1. Descriptive-normative technical data

As indicated above, this data sought to provide a description of residences in the housing association through the three temporalities – authorization, construction and contemporary periods. This was done by composing vector UFs constructed as follows:

- **Authorized vector UFs of the late 1990s:** via a composition of the authorized masterplan, authorized AFs of the late 1990s, and topographical positioning based on Google Earth Pro. After the scan, the original masterplan and AFs are vector digitalized in ArchiCad, façade by façade, for all AFs.
- **Unauthorized vector UFs of the mid-2000s:** with the same methodology of authorized vector UFs of the late 1990s.
- **Contemporary vector UFs of the early 2020s:** via a photogrammetry of the whole neighborhood's AFs vector digitalized in ArchiCad and topographically positioned using Google Earth Pro.

#### 2.3.2. Ethnographic social data

Regarding the ethnographical study, primary data is composed of the responses of the multiple focus groups surveys based on the results of the technical analysis.

### 2.4. Methods

#### 2.4.1. Descriptive-normative study

The main purpose of the descriptive-normative study is to respond to the question *how*. It is composed of three sub-studies. First, the normative study compares the authorized with the constructed. It overlays the authorized vector UFs of the late 1990s and the unauthorized vector UFs of the mid-2000s. Second, the descriptive study compares the constructed with how the constructed was modified by its inhabitants. It overlays the unauthorized vector UFs of the mid-2000s and the contemporary vector UFs of the early 2020s. Third, the descriptive-normative study compares the authorized and the existing constructions. It overlays the authorized vector UFs of the late 1990s and the contemporary vector UFs of the early 2020s.

All three analyses are established based on a morphological analysis grid used accordingly: *extend*, *attach*, and *Infill* (H. Kamalipour et. K. Dovey, 2020) to detect the common patterns of informality. *Extend/Extension* means the creation of private additions (horizontally, vertically), *attach/Attachment* means the creation of semi-private, private additions (horizontally, vertically), and *Infill* means the closure of a pre-existing formal framework. Moreover, “*individual space morphology alteration*” highlights additional subtypes of informality further enriched in the results section.

Common Patterns		Subtypes (if applicable)	
1	Attachment		-
2	Extension	1	Horizontal Extension
		2	Vertical Extension
3	Common entrance infill		-
			-
4	Individual space morphology alteration	1	Infill
		2	Enlargement
		3	Addition
		4	Symmetry

**Figure 3.** Informality grid used for the analysis of the overlays.

Besides, the study is color-coded: green for the authorized, red for the unauthorized and blue for the existing UFs.

#### 2.4.2. Ethnographic study

The main purpose of the ethnographic study is to respond to the question *why*. Therefore, in light of the results of the descriptive-normative study, we generate themes to be discussed by the inhabitants in order to understand further the dynamics and reasons behind urban informality in the domain of housing.



Therefore, we conducted interactive interviews with a sample of the inhabitants of this neighborhood selected via a snowball sampling (Breweton et. Millward, 2001) in the form of six focus group surveys made up of three to six participants each for a total of 45 households. The groups discussed the following themes:

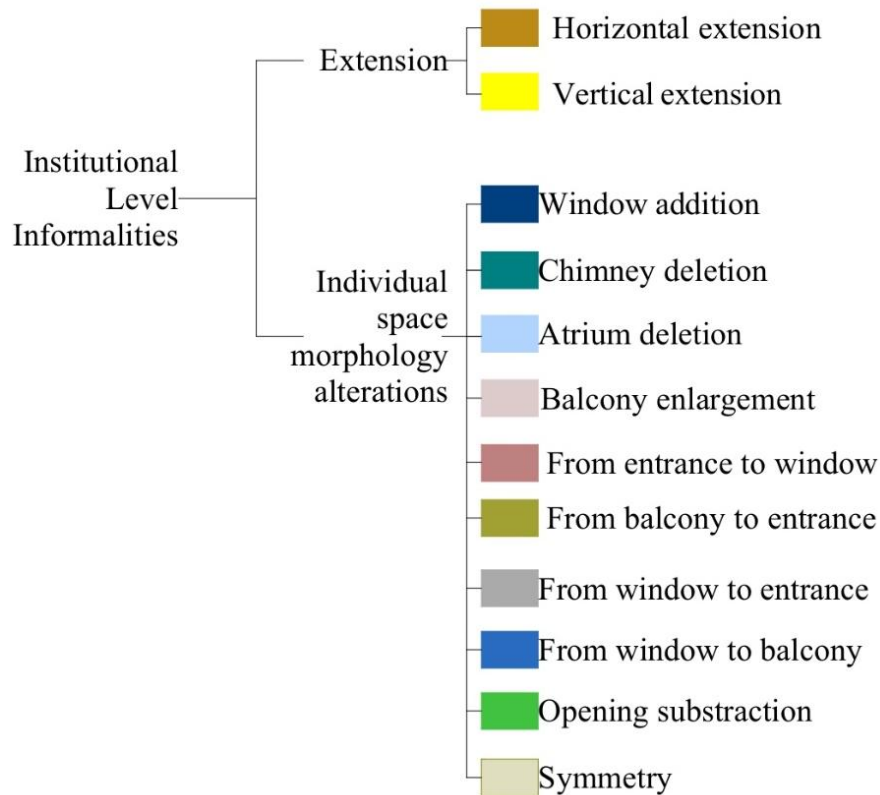
- (1). Institutional informality engaged by the housing association.
- (2). Individual informality engaged by the inhabitants.
- (3). Grounds for of individual informality in the housing field.
- (4). Role of the neighbors' approval in the dynamics of informalities.

### 3. Results and discussion

#### 3.1. Institutional level informalities

##### 3.1.1. Normative results

The results of the normative study using overlays of the authorized UFs' outlines of the late 1990s and constructed unauthorized UFs' outlines of the mid-2000s shows an interesting set of common patterns of institutional informalities deployed by the housing association. Indeed, even though unauthorized, the housing association effectively constructed all the AFs of the mid-2000s.

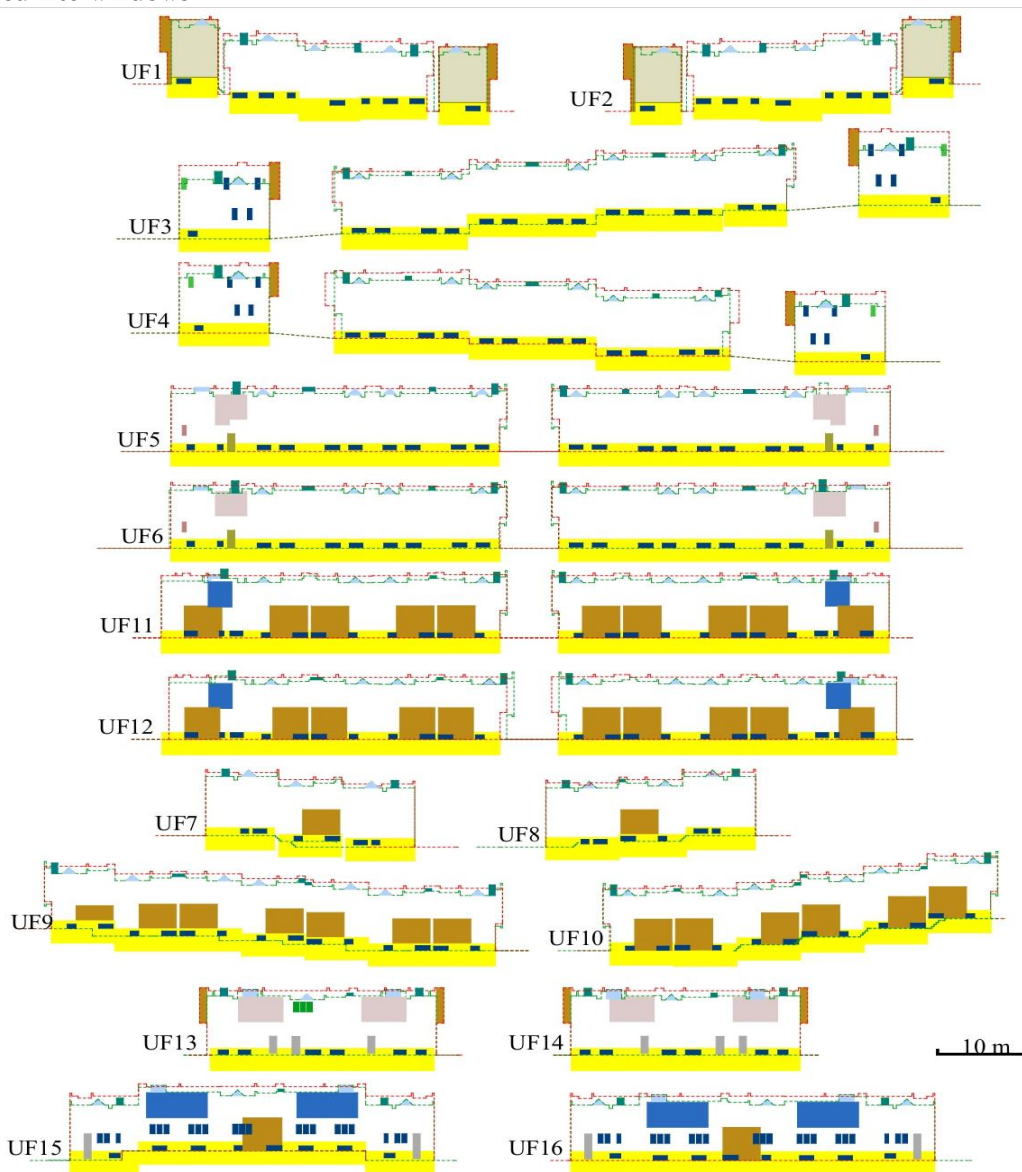


**Figure 4.** Common patterns of the institutional informalities deployed by the housing association based on the normative study and informality grid.

Compared to the authorized AFs, the latter expresses symmetrical and homogenous informalities between almost every two symmetrical facades as expressed in figure 5. Without exception, all UFs present vertical extensions and individual space alterations, whether it is related to windows' additions, openings' subtractions, chimneys' deletions, atriums' deletions, balconies' enlargements, or transformations of openings including adjustments from entrances to windows, from balconies to entrances, from windows to entrances, from windows to balconies, and even symmetrical items. Accordingly, in addition to identical institutional informalities relevant to the inclusion of an underground-floor with its windows for natural lightning and ventilation and the deletion of the chimneys and atriums, each UFs is marked with specific extra informalities. In view of that:

- **UF1 and UF2, two symmetrical facades,** show a mirror symmetry of the lateral facades for aesthetic purposes.
- **UF5 and UF6, two symmetrical facades,** show balconies enlargements, and other individual space morphology alterations for the lateral AFs (from balconies to entrances and from entrances to windows).

- **UF11 and UF12, two symmetrical facades**, show individual space morphology alterations for the lateral AFs (from windows to balconies).
- **UF7 and UF8, two symmetrical facades**, as well as **UF9 and UF10, two almost symmetrical facades** (as UF9 has 7AFs and UF10 has 6AFs), show horizontal extensions in the format of stairs to access the housings.
- **UF15 and UF16, two almost symmetrical facades** (as the topographical setting is not the same but the AFs and their placement is), shows a range of individual space morphology alterations (windows becoming balconies, balconies becoming entrances) as well as horizontal extensions for the lateral AFs under the format of stairs to access the housing units for the central AFs of both UFs.
- **UF3 and UF4, two almost symmetrical facades** (with UF3 containing eight AFs and UF4 containing nine), show the implementation of balconies as horizontal extensions and openings' substrations as individual space morphology alterations for the lateral AFs.
- **UF13** shows a range of individual space morphology alterations (balconies enlargements, from windows to entrances, from balconies to windows) as well as horizontal extensions for the lateral AFs under the format of balconies.
- Similarly to its symmetrical façade UF13, **UF14** shows the same patterns of horizontal and vertical extensions and the same range of individual space morphology alterations with the exception of the central AF's balcony transformed into windows.



**Figure 5.** Vertical mapping of the informalities of housing over the UFs. For the legend, see the previous figure.

In summary, the visual analysis of UFs through the overlays of the authorized and constructed items, shows :

1. Informalities present in all AFs, and hence UFs, without exception, and relevant to :
  - × The inclusion of an underground-floor with its windows for natural lighting and ventilation with the rationale of having more space.
  - × The deletion of the chimneys and atriums for cost purposes.
2. Informalities present in almost all AFs, with some exceptions, and relevant to horizontal extensions in the format of external stairs for the purpose of accessing the housing unit, as a result of the inclusion of the underground-floors.
3. Informalities relevant to the other individual space morphology alterations expressed in figure 4.

The overall aspect of all unauthorized, yet constructed facades doesn't seem informal in the traditional perception of it, i.e., chaos, poor materials and execution (G. Celentano et Guillaume Habert, 2021). In contrast, this case study shows that informality can be symmetrical, consistent, and homogenous. Furthermore, it couldn't be identified unless the establishment of a thorough normative comparison of architectural documentation.

### ***3.1.2. Ethnographic results - Institutional informality engaged by the housing association***

With the perspective to understand *why* the informalities are implemented, interactive interviews were conducted in the form of a multiple focus group survey in accordance with the normative results. The interviews orientated towards the institutional informalities engaged by the housing association showed that the entirety of the participants did not know that the modification authorizations after the authorization of late 1990s, only apply to the master plan of the whole neighborhood and not to the individual facades. Furthermore, the majority did not know that the constructed facades of the early 2020s are unauthorized, and more than the half of them did not know that underground floors are unauthorized for the entire neighborhood. Indeed, from one side, the institutional level informalities does create a ground for more individual level informalities. From the other, since it is the housing association that is in charge of the architectural and urban authorizations, the majority of the inhabitants are not even aware of what is authorized and what is not, as the regulations related to the associations of housing does not address the issue of administrative documentation sharing.

## **3.2. Individual level informalities**

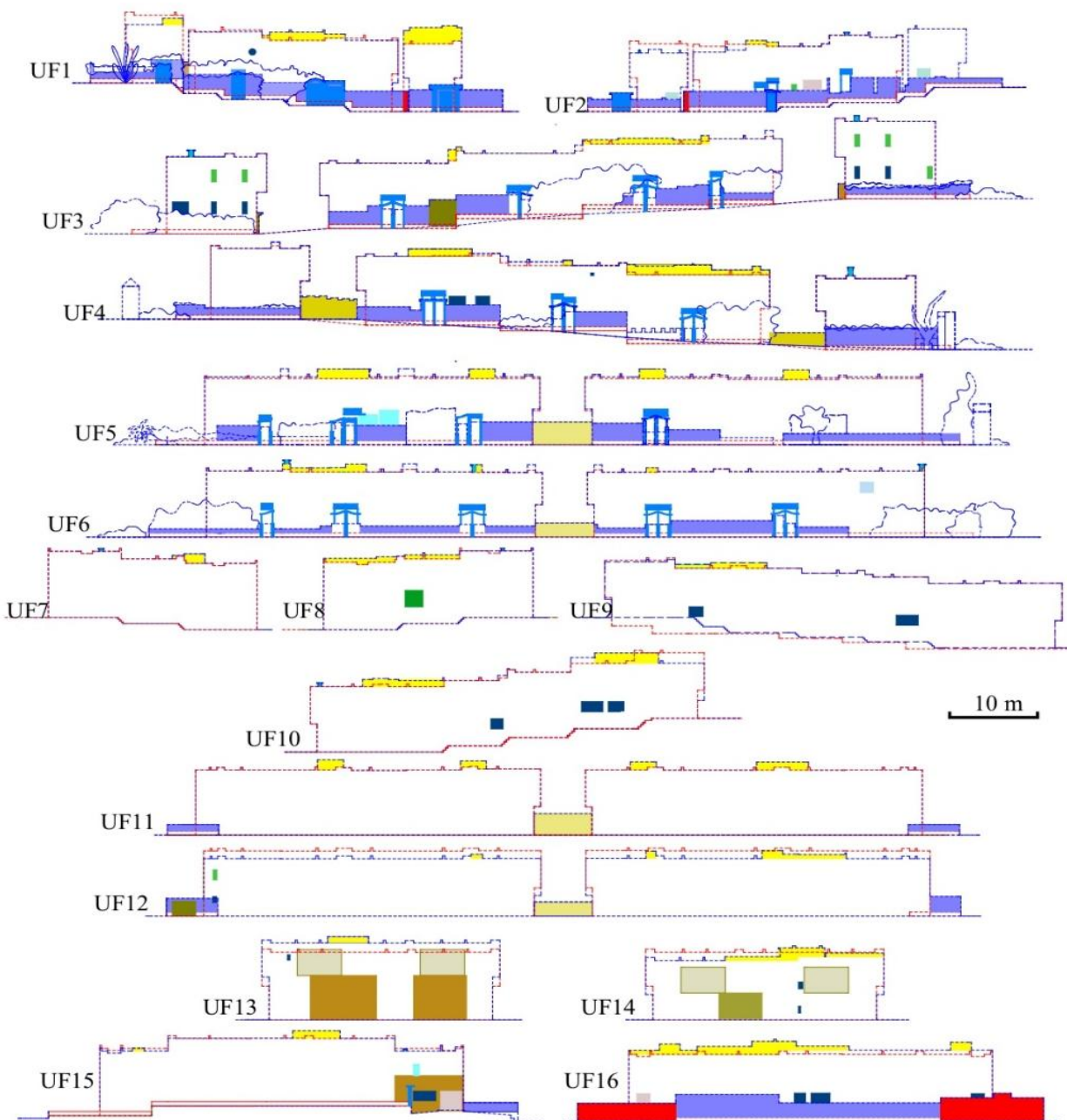
### ***3.2.1. Descriptive results***

The results of the normative study using overlays of the constructed UFs' outlines of the mid-2000s and contemporary UFs' outlines of the early 2020s show an interesting set of common patterns of individual informalities deployed by the inhabitants of the neighborhood. Indeed, similarly to the institutional informalities, the latter can be symmetrical, homogenous and consistent as expressed in figure 6. Without exception, all UFs present extensions and individual space alterations, whether it is related to infills, enlargements, additions, or symmetries, in addition to attachments and common entrances infills:

- **UF1** shows a consistent range of individual space morphology alterations with external walls' vertical enlargements and entrances reframings. In addition, the majority of AFs include access to the roofs with an additional room. Furthermore, the vegetation in accumulation with the external walls vertical enlargements constitute a barrier to the vis-à-vis the implemented individual informalities of the groundfloor.
- **UF2** shows a wider spectrum of the implemented individual informalities. Interestingly, both symmetrical facades show a symmetrical common pattern of informality, namely attachment, a transfer of common space to private space for garden enlargement purposes. Indeed, symmetrical AFs of the right lateral for UF1 and left lateral for UF2 express the same kind of informality, as the inhabitants refer to existing examples of informality to implement it is well. In this sense, an existing pattern is a justification for the implementation of another.
- Likewise, the visual analysis of **UF3** shows this same informal rule through its lateral facades' informalities related to the openings' subtraction and addition. Furthermore, this reinforces the idea of order within informality. Moreover, individual space morphology alterations such as the parking doors additions express an aspect of wealth. Moreover, the external walls' vertical elongation in addition to the similar and symmetrical entrances reframing give an aspect of homogeneity.
- This same idea of order in individual informality through repetition and symmetry is reinforced via the drivable common infills of both entrances in addition to the identical entrances reframing in **UF4**.
- Likewise, **UF16** conveys the same pattern through a different set of informalities, namely the attachment.



- The Eternal walls' vertical elevation of **UF5** is quite low on the extreme lateral facades, as an informality has more chance of occurring if it already happened on a near, similar, or symmetrical AF, as seen in UF3 for the openings' addition and subtraction as well as between UF1 and UF2 for the attachment.
- Furthermore, both UF5 and **UF6**, symmetrical facades, present the same kind of individual informalities occurring at the same spatiality, namely the common pedestrian entrance infill which is reinforcing the occurrence rule as expressed above.
- Similarly, **UF11 and UF12** likewise symmetrical, express the same informality in the same spatiality, namely the common pedestrian infill. Moreover, there is a symmetry of vertical extensions within the same façade for UF11 and UF12 regarding both of its internal AFs near the common entrance infills.
- In addition to UF1-UF2, UF5-UF6, UF11-UF12, and UF16, **UF13 and UF14** show a symmetry of the balconies similarly implemented in their symmetrical AFs.
- The other analysis of the remaining UFs, namely **UF7, UF8, UF9, UF19, and UF15** articulates other kinds of eclectic informalities such as vertical/horizontal extensions in addition to infills, windows additions and enlargements, as well as balcony enlargements.

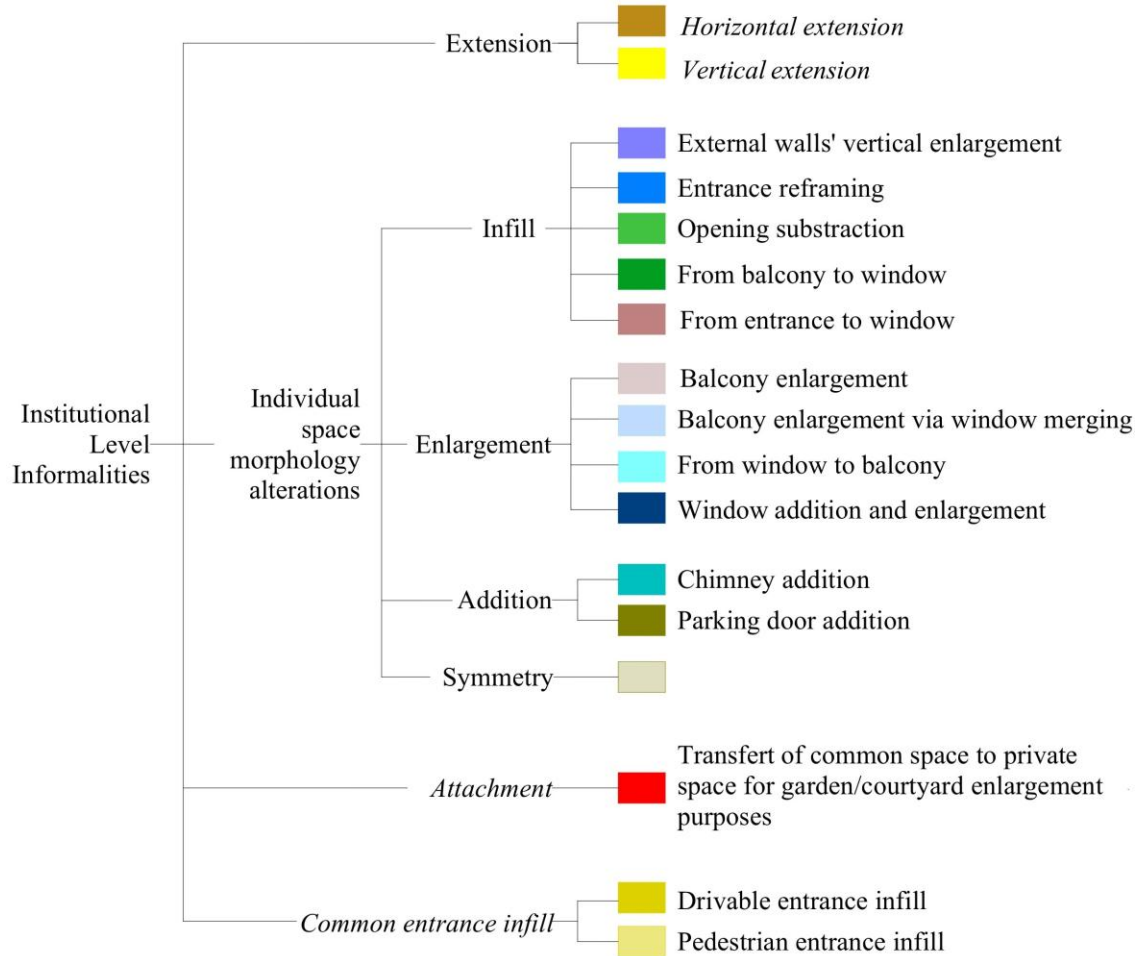


**Figure 6.** Vertical mapping of the common patterns of the individual informalities deployed by the inhabitants based on the descriptive study and informality grid. For the legend, see the next figure.

### Common Patterns:

The comparative analysis between what the association of housing has built and how the inhabitants have transformed it shows twice as much as the common patterns of the housing institution, namely:

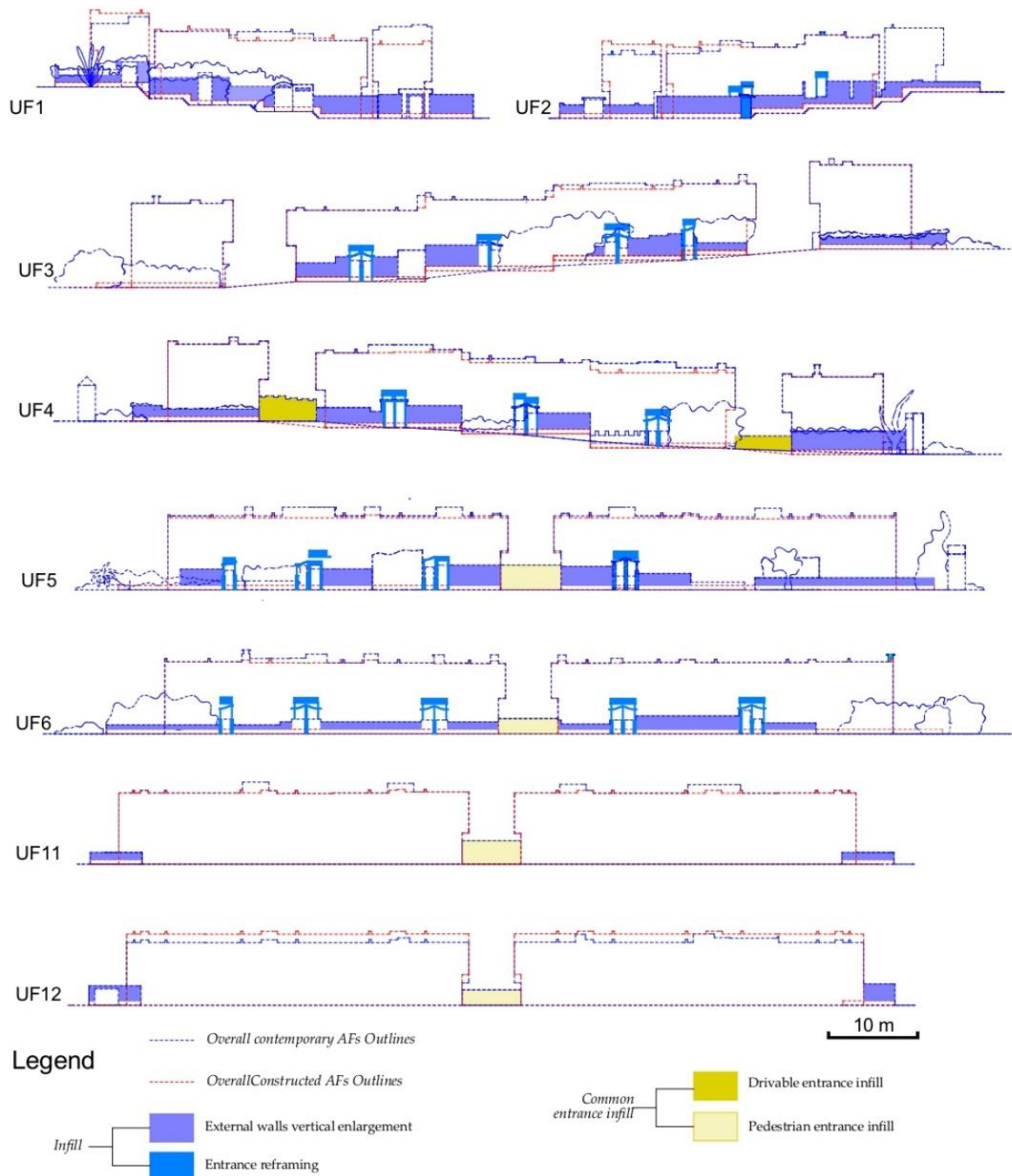
- (1). Extension (horizontal and vertical).
- (2). Individual space morphology alterations (infill, enlargement, addition, and symmetry).
- (3). Attachment.
- (4). Common entrance infill (drivable and pedestrian).



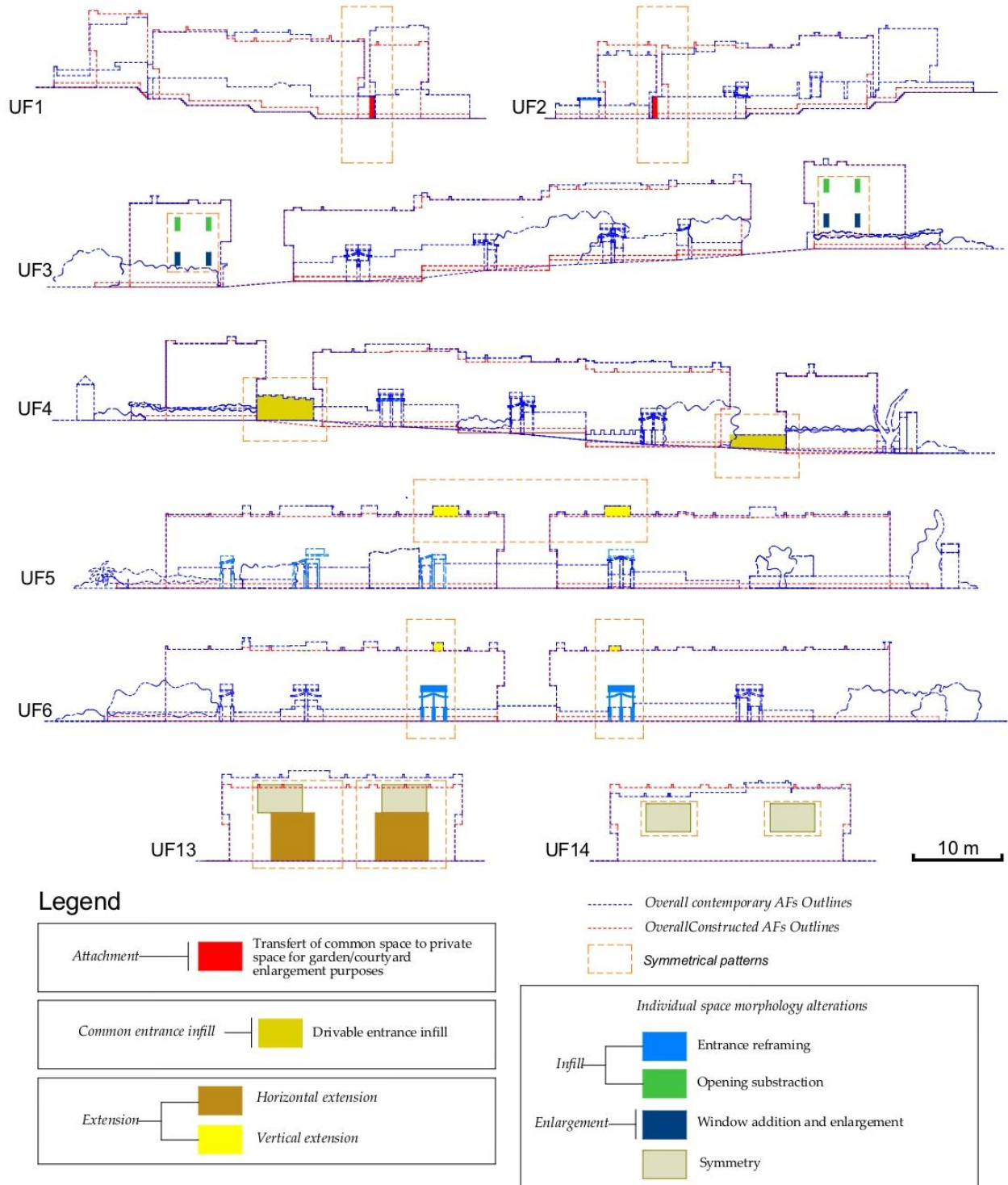
**Figure 7.** Common patterns of the individual informalities deployed by the inhabitants based on the descriptive study and informality grid.

### Randomness, symmetry and homogeneity:

In addition to the random aspect, the individual informality patterns can be homogenous by consistent repeatability (*see figure 8*) and symmetrical between similar or symmetrical AFs and UFs (*see figure 9*). Furthermore, the homogenous and symmetrical aspects of the individual level informalities express from one side order in the patterns, and from the other, materialized needs of intimacy and security control as per the external walls vertical enlargements and common entrances infills, either drivable or pedestrian.



**Figure 8.** Homogenous individual informalities by consistent repeatability.



**Figure 9.** Symmetrical individual informalities between similar or symmetrical AFs and UFs.

**3.2.2. Ethnographic results - Individual informality engaged by the inhabitants**

Undeniably, the majority of the participants do not consider to go through the legal processes whenever wanting to do architectural or urban modifications. The recurrent assumptions invoked through the interactions were related to the lengthy formal procedures, complicated bureaucracy, doubts about achieving authorizations through the formal process, unachievable requirements, eventual complications of the formal process, and institutional informalities.

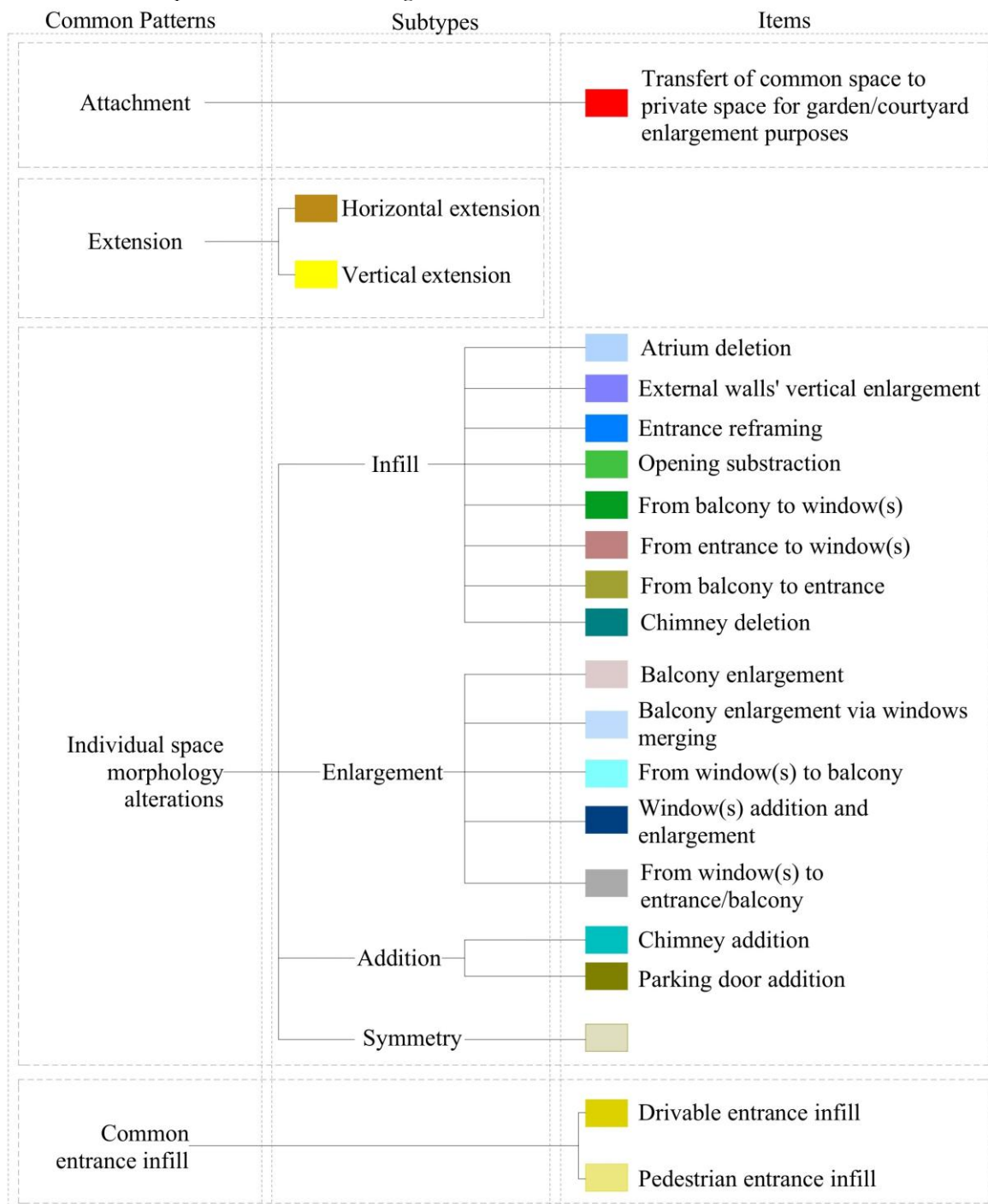


Furthermore, a minority of the participants stated considering going through the legal process to avoid blockages at the level of administrative documentations, and to be lawful. However, the administrative history of the neighborhood shows no authorization requests in the sense of individual architectural-urban modifications.

### 3.3. Combined informalities

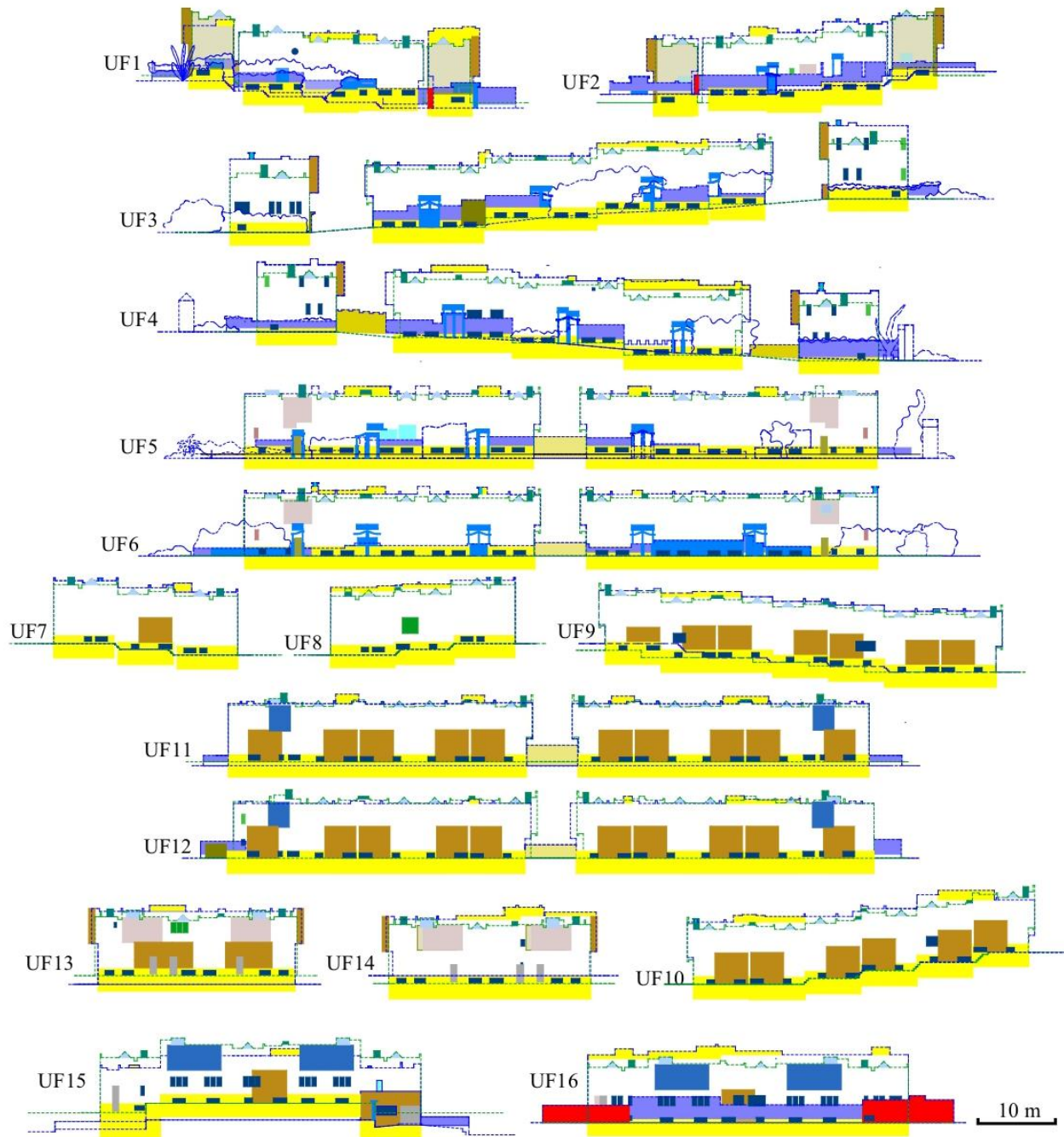
#### 3.3.1. Descriptive-Normative results

Undetectable without the architectural administrative history and the in-situ reconstitution of the neighborhood, the combined informalities communicate a great articulation of common patterns. Furthermore, the combined informalities show a full presence overall the neighborhood's UFs:



**Figure 10.** Synthesis of the combined common patterns deployed by the housing association and the inhabitants based on the normative-descriptive study and informality grid.





**Figure 11.** Vertical mapping of the combined common patterns of informalities. For the legend, see the previous figure.

### 3.3.2 Ethnographic results

#### *Grounds for individual informality in the housing field*

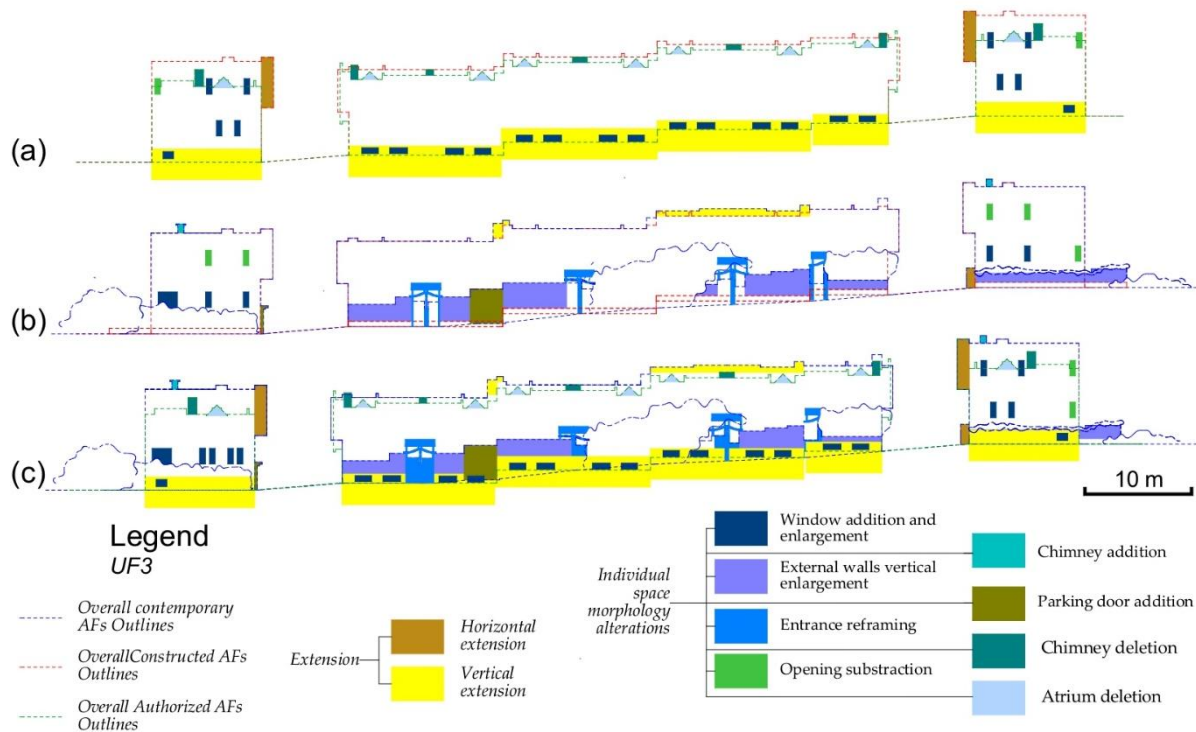
The majority of the participants agreed with the idea that the legal arsenal linked to the architectural modifications of the habitat being unattainable, the inhabitants proceed nevertheless to their modifications of facades, thus giving rise to informalities as a resistance to the formal.

#### *Role of the neighbors' approval in the dynamics of informalities*

The majority of the participants agreed with the idea that when close neighbors agree to, or are not bothered by the modifications of the facades, it somehow brings in a kind of legitimacy to the unauthorized modifications. Indeed, this is an *informal rule* (L. Zhang et al. 2016) that regulates the individual informalities for almost 70% of the sample studied.

#### 4. Conclusion

Informality is currently and prospected to stay the prevailing urban realm of the global south (A. G. Ejigu, 2011) at the point of being called the “new normal” (I. Gondo, 2011). This study empirically showed many patterns, aspects, and rules of informality. Furthermore, it showed the importance of the implemented methods to understand it. Indeed, meticulously mapping vertically the informalities permits to understand its common, but most importantly, homogenous, consistency and symmetrical patterns. Indeed, informality, at the individual as per institutional levels, can be quite organized, and is not necessarily random. Moreover, some parameters have proved their significance into dissimulating the informalities and their illegal aspect, namely, vegetation, symmetry, architectonic repetition, quality of the materials and their execution. From the other hand, the informality implemented by the housing association jeopardized the formality of the whole neighborhood in the sense that the inhabitants could only either transform their built environment, making it more livable through their materialized needs and hence resist the transformation ban, or undergo the institutional informality of the housing association, and yet, live with informality:



**Figure 12.** UF13. (a) Institutional informalities; (b) individual informalities; (c) Combined resulting informalities.

The reason behind this is the legal framework of housing associations in Morocco, as the inhabitants could not help change their informality situation unless the housing association does it for them, which creates situations such as that of the case study where informality persists for more than two decades. A situation where the inhabitants are at the mercy of the housing association.

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