

# PARTICIPATORY ENGAGEMENT IN URBAN DESIGN PROCESS: THE CASE OF AN URBAN SETTLEMENT IN MALTA

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**Public participation in urban design matters goes beyond public consultation, a useful tool which is being reduced to endorsement of documents prepared by bureaucrats in national development planning agencies. Effective engagement of the public at an early design stage is useful for having a socio-economic and environmental sustainable urban design. Based on a case study from Malta, this paper provides insight on how residents are the prime movers of an urban planning issue involving the re-development of the site where their residences are located. Through fieldwork surveys and interviews with the residents, data of the site and the surrounding environs was collected. The design team mapped and interpreted the findings. In light of the results derived and taking cognizance of the concerns of the general public and national developmental and environmental planning policies, an urban design proposal was prepared. The resultant layout was a co-designed solution of the team with the residents in full respect not only of existing socio-economic realities of the community but also of the natural environs, the geophysical context of the site. Furthermore, although more compact than the present, the proposed layout is more environmentally sensitive and socio-economically sustainable.**

**Key words:** participatory engagement, urban design process, co-design, re-development, Malta.

## INTRODUCTION

Urban settlements are a living laboratory of interface to a varying degree between the built and the unbuilt. Settlements are the resultant of interaction between the socio-economic and the natural environs, a context which offers opportunities and challenges (Alberti *et al.*, 2003). In the past two decades, research relating to the importance of public participation in the planning process, now a foregone consideration in the endorsement of all public planning documents, became more pronounced. It is now widely accepted that resident engagement in urban planning is beneficial to the individual and to the community at large, and to development of a given urban initiative itself (Wood *et al.*, 2002; Ohmer, 2008; Gaventa and Barrett, 2012; Wilkie and Michialino, 2014). The locals are the prime movers in planning policies and actions, the ultimate owners of any official adopted planning scheme(s) and/or development planning project(s). Participatory co-production is a guarantee that not only a given document is circulated for public consultation, but that the final document itself is the result of input from all parties concerned. An effective

illustration on how this can be developed is through the design of an action plan and/or a masterplan for a given zone. Participatory co-production in the preparation of such documents reflects not only the individual and community needs, but will result in remarkable co-design.

The focus of this paper is the importance of participatory engagement in the urban design processes; public engagement had formed a spatial solution which addresses the environment in its totality. It is based on a case study from Malta, the largest island in the Maltese archipelago. It relates to the redesign of the caravan site at GHadira, one of the many camping sites on the island, sites which eco-inspired lobbies have been strongly against for over the past two decades. The location of the GHadira caravan site is on a sloping terrain close to Mellieha Bay (Figure 1).

In terms of the classification of typology of participation undertaken, proposed by Pretty and Hine (1999), the participatory engagement involved in this study at GHadira is interactive. Unlike participation through consultation, whereby the engagement of the locals is to derive their opinions on which the design team drafts a proposal which may, or may not, involve same, in participatory engagement locals participate and are the prime movers for the formation and formulation of the resultant urban settlement.

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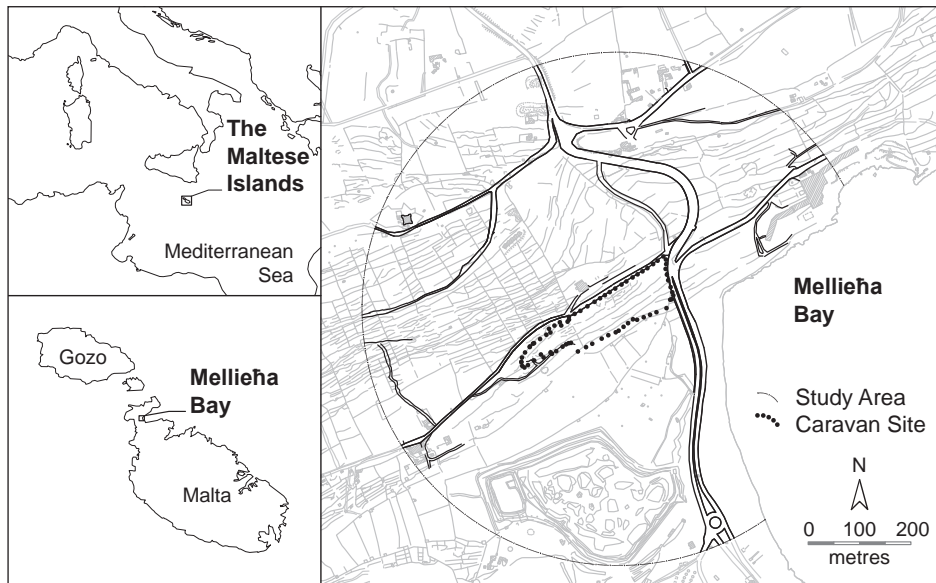


Figure 1: Site location plan

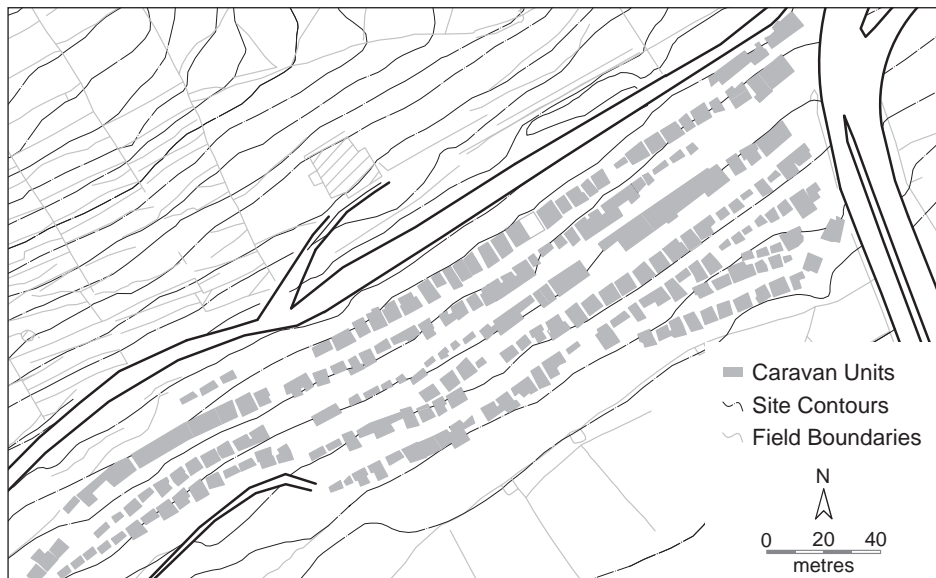


Figure 2: Layout of the caravan site at GHadira

Given the eco-sensitive location, an appreciation of the study area was deemed imperative: it is outside the development zone with a significant visual impact, it is close to a Foresta 2000 and a Natura 2000 sites to the north and south respectively. Parameters which were identified as crucial for re-developing the site are the existing land uses, geology and pedology, ornithology and ecology, transport and visual impact.

The caravan site is a settlement which was legally established in the later 1970s (Assoċjazzjoni tas-Sidien tal-Caravans u Bangalows, 2008). The originally approved layout was not followed by the caravan owners and, over the years, it had sprawled in a *liaise affaire* manner (Figure 2), breaching both national development planning and sanitary legislation. From a touring camping site with caravans on wheels, it ended up with some units erected in load-bearing masonry structures. In 2009, the Association of Owners of Caravans at GHadira resolved to propose a re-design of the existing settlement. It had long been considered essential

to develop an artistic impression on how the current site may be redeveloped through an environmentally sensitive design proposal. Fundamental for a sustainable urban design solution was the preparation of a masterplan for the area. The urban design methodology developed, taking full cognisance of the existing socio-economic and geophysical fabrics, it was applied to design a blueprint for the re-development of the settlement. The proposed urban planning layout is the result of designing through consensus, a co-design with the residents in particular and the community at large.

## METHODOLOGICAL APPROACH

### Objectives

The philosophy adopted for the upgrading of the site aims at integrating the environmental setting with the residents' requirements. It was deemed essential that a balance between the environmental backdrops, community needs and provision of essential public services, sustainability and

security, is formulated. This was attained through a design process which takes into account:

1. the characteristics and constraints arising from the existing physical and ecological environments, thus determining the natural elements present at the site;
2. the establishment of a qualitative social profile of the community living at the caravan site, an exercise which helped identify existing nodes connecting human; and
3. integration of the existing nodes within a proposed urban design layout which connects with the existing natural elements of the site.

### Fieldwork

To establish the main natural elements, a quantitative land use analysis of a study area measuring 500 metres radius centred on the caravan site was undertaken (Figure 1). Such an area was deemed sufficient for an environmental impact assessment in Malta, an island measuring 27.4 km in length by 14.5 km in width. Desk studies and ground surveys, both undertaken in August 2009, were limited to this boundary. Ground surveys tend to carry an error in the interpretation and estimation of the superficial area for each land use; however their basis is sufficient for the purpose of this study. Planning policies pertaining to the area and the conservation status of the main cultural and ecological features of the area were identified as part of the integrated setting.

To gain an understanding of the profile of the community at Għadira caravan site, a qualitative data collection method was applied based on one-to-one interviews with the residents at their respective caravans.<sup>2</sup> The interviews were not just a source of data collection but an inquiry. The residents not only discussed issues at the site, but were encouraged to share possible solutions and actions which needed to be addressed in the proposed design. The sample was the entire community. The interviews were undertaken over the months of July and August 2009, the peak months of the summer season. The design team interviewed circa 85% of the population, a percentage which effectively qualifies as a census.

## DESCRIPTION OF THE STUDY AREA

### Land Use

Mellieħa Bay is one of the most popular leisure venues and an important tourist landmark in the Maltese Islands, housing a number of kiosks along the coastal road. The area is reached by Triq Marfa, an important thoroughfare, since it leads to Ċirkewwa, and thence to Gozo, the second largest island of the archipelago.

The various land uses within the study area are listed in Table 1 and plotted in Figure 3. Although the main landscape feature is the long sandy beach, the area is predominantly arable, or in its natural state, with only one fifth of the land area being built-up. Developments legally permitted are mainly directly linked to maritime and/or touristic activities,

<sup>2</sup> A resident cannot own more than one caravan at Għadira site (Assoċjazzjoni tas-Sidien tal-Caravans u Bangalows, 1981).

namely the Mellieħa Bay Hotel built in 1976, and the caravan site, the subject of this research, which comprises circa 3% of the study area. Animal husbandry units and farmhouses at the south-west sector reflect the rural nature of the area. Torri Sta Agata, better known as Torri l-Aħmar, is a seventeenth century military outpost about 300 metres north-west of the caravan site.<sup>3</sup>

Table 1: Land uses within the study area

Land Use Type	Area (m <sup>2</sup> ) <sup>a</sup>	Percentage (%) <sup>b</sup>
Caravan site	19 943	2.9
Beach	33 687	4.9
Bird sanctuary	63 960	9.4
Foresta 2000	58 439	8.6
Agricultural land	129 312	18.9
Afforested area	54 687	8.0
Ecological area	19 753	2.9
Torri l-Aħmar	5 354	0.8
Built-up area	120 982	17.7
Abandoned land	177 301	25.9

- a. The percentage error of the observations made during the ground surveys is approximately proportional to the extent of the area under study  
 b. Percentage was calculated as a fraction of the total study area

Around 42% of the arable land is abandoned, while 13% is afforested, especially the northern sector of the study area. Most of the trees were planted to camouflage the residential units, as windbreakers to fields and to substitute abandoned land. Such trees counteract the soil erosion present and consist largely of *Pinus halapensis*, *Ceratonia siliqua* and *Acacia* sp. These species, except for *Acacia* sp., are protected as per *Legal Notice 12 of 2001* (Laws of Malta, 2001). To further strengthen this trend and to act as food for migrating and wintering bird species, BirdLife Malta created Foresta 2000 exactly to the north of the Caravan and Bungalow site, with the aim of establishing a woodland consisting exclusively of Mediterranean tree species (Gatt and Role', 2008).<sup>4</sup>

### Geology and Pedology

The geology gives rise to the current landscape with the clay forming a gently rolling landscape, partly cultivated, and now forming part of the Foresta 2000 initiative. Upper Coralline Limestone Formation, the youngest of the Tertiary formations present in the Maltese Islands, outcrops in nearly 75% of the study area (Office of the Prime Minister, 1993). Faults run west-east through the area; outcrops of the Blue Clay Formation are sandwiched between two faults. The members of the Upper Coralline Formation present are Gebel Imbark, Tal-Pitkal and Mtarfa (Pedley *et al.*, 1976; Pedley, 1978). The Pitkal Member, a member partly exploited by the quarrying industry for the production of concrete aggregate, outcrops at the location of the existing settlement at Għadira site. Globigerina Limestone Formation is present along a small stretch on the north-eastern part of the study

<sup>3</sup> This cultural heritage site is managed by Din l-Art Helwa, a non-governmental heritage organisation, and is open to the public.

<sup>4</sup> BirdLife Malta engaged Din l-Art Helwa and PARC, the afforestation department within the Ministry for Rural Affairs and the Environment, as partners in the initiative with the aim of establishing a nature park at the area stretching to Iċ-Ċumnija.

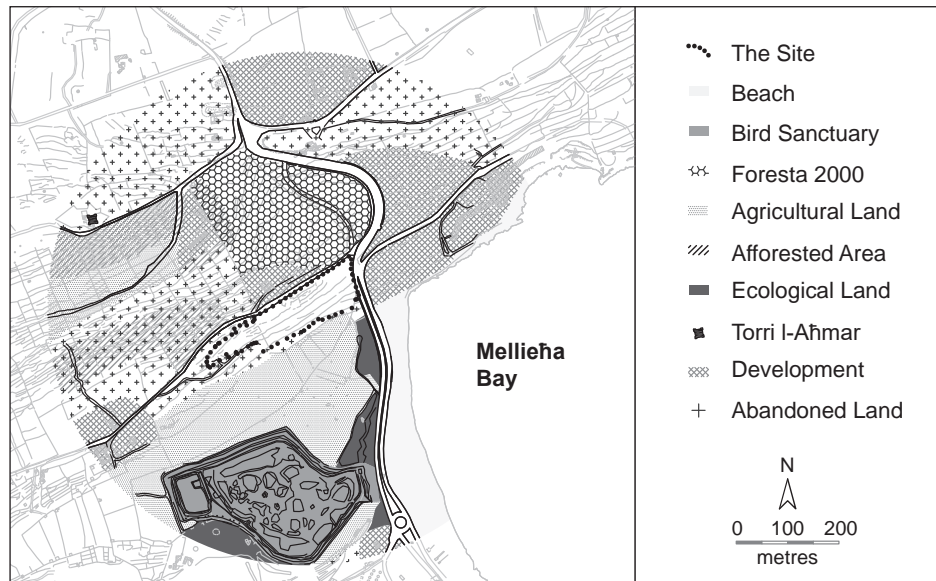


Figure 3: Land use plan

area. Quaternary deposits are recorded in the area currently occupied by the nature reserve.

In arid and semi-arid regions such as the Maltese Islands, soils reflect the geological strata. Lang's classification was used in this study due to its direct correlation to the parent material, topography and anthropogenic interference (Lang, 1960). Upper Coralline Limestone Formation is associated with terra soils, Blue Clay Formation with carbonate raw soils and Globigerina Limestone Formations with xerorendzinas. Thus, at the northern sector of the study area where the Upper Coralline Limestone outcrops, Tax-Xagħra series occurs and the carbonate raw soil San Lawrenz series is present where Blue Clay surfaces. The band of soils where the caravan site is located was originally anthropogenic, mainly comprising of Inglin complex. Anthropogenic disturbance can be identified either by random variations in the surface soil colour, or by non-intimate mixtures below the uniform surface layer. L-Inglin Complex is found along the valley sides with strong terracing and is usually carbonate raw soils mixed with rock flour and terra soils.

#### Ornithology and Ecology

Declared a bird sanctuary in 1978, the GHadira wetland comprises about 9% of the total land area. By virtue of *Legal Notice 41 of 2003* (Laws of Malta, 2003), the ornithological and ecological importance of the wetland was highlighted and hunting and trapping in the area surrounding it was banned. The GHadira wetland is a rare and endangered habitat in Malta and is an important stop-off point for migrating birds. It is classified as a Special Area of Conservation of International Importance.

Along the coast and bounding the bird sanctuary is a strip of *Arundo donax* as part of the GHadira sand dune, an area of ecological significance. Both the bird sanctuary and the sand dunes are scheduled as Sites of Ecological Importance Level 1 and a RAMSAR Site – Wetland of International Importance and a Special Area of Conservation. The rest of the bird sanctuary and the sandy beach are scheduled as an Area of Ecological Importance Level 3 and Level 4 respectively. A general presumption against development prevails in

Areas of Ecological Importance (Planning Services Division, 1990). Given that the bird sanctuary is a Natura 2000 site, any proposal for developments requires careful analysis.

#### Transport

The site is located east of Triq Marfa, the regional road leading to the Ċirkewwa harbour, the locality in the north of Malta from where the ferry service to Gozo operates. This ferry, which crosses the channel every 45 minutes and in larger intervals during the night, provides crossing on a daily basis for hundreds of vehicles, cars and trucks, and a few thousand people in the off-peak season. During long public holidays and the summer season, local and overseas tourists cross in larger numbers and the volumes of vehicles, including coaches for the transit of tourists, increase significantly. This road runs through the study area and along Mellieħa Bay, a very popular sand beach with the residents of central and northern Malta. Off this road, there are a number of secondary roads to the east leading to Mellieħa Bay Hotel, whilst to the west to a number of rural roads, including the one through the GHadira caravan site. Most vehicles at the caravan site are light cars; refuse collecting vehicles which need not to go through as collectors are located just at the entrance to the site.

#### Visual Impact

In contrast to the derelict residential units further uphill which are camouflaged by trees, the caravan site is not screened. It is easily viewed from the main thoroughfare, especially given the topography of the area and the fact that minimal effort was undertaken to make it blend with the surrounding landscape. On the other hand, the site is situated in such a way that residents of the caravan site can absorb the full panorama of the area: the bird sanctuary, Mellieħa Bay and the town of Mellieħa.

### DEVELOPMENT PLANNING WITHIN THE STUDY AREA

#### Development Planning History

Development planning policies are developed to regulate land use. They are useful tools to control urban sprawl into

the surrounding landscape (Njegovan, 2008; Zeković *et al.*, 2015). Development planning history of the study area since 1992, when the *Development Planning Act* was enacted, is characterized by planning consent granted for (1) the upgrading of public infrastructure relating to utilities and transport network, (2) extensions to existing agrarian activity and (3) to establish tourist complexes, including platforms, to some existing licensed kiosks. Applications relating to the construction of new kiosks, placing of tables and chairs to existing licensed kiosks, new agricultural stores, boundary walls and to works related to caravans, were consistently turned down. Also, applications for the installation of satellite dishes were refused except on existing tourist establishments. Development planning applications, which to-date are still pending, mainly relate to the upgrading of public transport infrastructure and to extensions to existing licensed tourist-related establishments.

### Relevant Local Planning Policies

The main planning policy document which regulates the region where the caravan site is located, is the *North West Local Plan* (Malta Environment and Planning Authority, 2006). In terms of Policy NWCO 6, no development will be allowed within the wetland and along the strip of land containing *Arundo donax*. Furthermore, in line with Policy NWCO 8, the Malta Environment and Planning Authority is in favour of extending the existing bird sanctuary.

The agricultural land surrounding the wetland is assigned as an Area of Agricultural Value and it has to comply with Policy NWAG 1 which aims to safeguard arable land. The entire northern sector of the study area is assigned as a Major Recreational Area. As per Policy NWRE 1, such areas are subject to management and action plans. The relevant action plan relevant to the study area is the *Marfa Action Plan* (Malta Environment and Planning Authority, 2002). The zoning covered by this action plan lies just north of the caravan site. The land in the northern sector of the study area is assigned for agriculture, and thus subject to *Marfa Action Plan* Policy MAG 1 which aims at protecting irrigated agricultural land.

The *North West Local Plan* delineates part of the northern sector of the study area as garigue, thence it has to comply with policy NWCO 13 which protects such areas and prevents illegal activities such as soil dumping and off-roading. Of special relevance to this research is Policy NWML 18 of the local plan which addresses the GHadira Isthmus. This policy underlines the need to resolve competing spatial demands on GHadira Bay and its environs through environmental conservation and management, including the landscape. It emphasises the importance of protecting the area against unsustainable development.

## RESULTS AND DISCUSSION

### The Proposed Urban Layout

The overall infrastructure, physical and social, of the settlement was remodelled to take into account the topography and the ecological and socio-economic realities. Environmental considerations drawn from the fieldwork were fundamental in the re-design of the urban layout (Table 2). The existing and proposed design considerations are tabulated with respect to land uses, geology and pedology, ornithology and ecology, transport and visual impact. Also stated are the respective proposed mitigating measures and, where applicable, relevant current local planning policies. The resulting co-design of the caravan site embodied a strong social concern and low-cost, sustainable technology. The community residing at the caravan site is a long established, closely knitted neighbourhood.

Mapping the outcomes of resident engagement (Gaveta and Barrett, 2012) is fundamental for an urban design developed through participatory engagement. The rigorous one-to-one, face-to-face meetings with residents and regular meetings with the Association whose committee members are the active informal leaders of the community, proved to be an effective exercise in engaging the residents in the re-design of the existing caravan layout. The resulting proposed urban settlement is a site sensitive design (Figure 4). It is not just an urban design taking into account the responses of the

Table 2: Considerations impinging on the design of the proposed layout

Parameter	Existing Considerations	Proposed Design Considerations	Mitigating Measures	Applicable Policies <sup>c</sup>
Land use	Natural heritage predominates; 20% of land is built-up	No extension to existing footprint of site	Design which blends with the existing natural environs	NWAG 1 NWRE 1 NWML 1
Geology	Upper Coralline Limestone (Tal-Pitkal Member) outcrops on site	Though of inferior quality, this limestone can be utilized as aggregate in concrete	New caravan units to make use of this limestone excavated on site.	none
Pedology	Anthropogenic soil is present on site	Anthropogenic disturbance is allowed	Any soil type can be used in green areas	none
Ornithology	Bird sanctuary will be further extended	No disturbance which effect bird species	Not applicable	NWCO 8
Ecology	Special Area of Conservation Importance	No disturbance during and post construction of the settlement	No further urban sprawl into the existing landscape	NWCO 6 NWCO 13 NWML 18
Transport	Most residents use private transport	Introduce underground car parking spaces	Green roofs to cut down on air pollution and serve as insulant	none
Visual impact	Site located in a panoramic terraced landscape	Proposed design has to be stepped to follow original site contours	Redesign of site has to compliment the site in terms of materials, texture and colour	none

c. Applicable *North West Lokal Plan* policies



Figure 4: Proposed layout of the caravan site at GHadira

residents through public consultation; it is the development of a solution through participation of the residents engaged in the design process. Furthermore, although it is not an official planning document, the developed solution forms the basis of a development brief for the area, a provision contemplated in local planning legislation. Such briefs are issued by the planning regulator in Malta to develop ad hoc planning policies for a given site (Bianco, 1999).

The focus of the resulting layout was not on a single caravan unit space, but on the relationship of such units to the wider settlement and to the site. The way each unit relates to one another is a response to the physical characteristics of the site. The re-location of each unit was noted not only with respect to the physical infrastructure, but also in relation to the social infrastructure of the existing settlement. The spaces, be it the private terraces of the individual units and/or the public access routes and open areas, articulate an important dimension of human/social activity. Without this dimension, the notion of community being the family or the neighbourhood will not be present, resulting in a soulless place.

Included in the proposed layout was the relocation and redesign of the premises of the Association, a small building which is a point of reference to the managing committee of the settlement. The building also serves as a multipurpose place to cater for community driven initiatives. Open spaces were likewise relocated and redesigned for gathering of the community, whether religious or otherwise.

**Building Density**

In the proposed redesign of the caravan site, which contained circa 85% of the existing footprint, are included 344 units, which is 46% more than the existing number on site. The 15% of the footprint which will not be developed will be reinstated back for agrarian uses with reconstructed terraces rooted in the concept of landscape archaeology. The resulting building density on site was increased by 42% (Table 3).

The impacts of increased building density are a main highlight in any debate in urban design and planning discourse. An increase in building density is often coupled with an increase in urban density and/or urban sprawl. Such augmented increments are inversely proportional to socio-economic and environmental sustainability (Newman and Kenworthy, 1999). Higher building densities generate higher vehicular traffic volumes, thus giving rise to traffic congestion and the associated increase in air pollution. Green roofs were introduced, an effective measure which mitigates the adverse impact of traffic generated pollution in a tangible, sustainable manner (Wu *et al.*, 2003). A recent study on the effect of urban density, green areas and mobility patterns, with respect to the quality of the urban environment, supports this intervention in the co-designed masterplan for GHadira (Verani *et al.*, 2015).

Table 3. Percentage variation between existing and proposed layouts

	Existing	Proposed	% Difference
Caravan units	236	344	+ 46.0
Site footprint <sup>d</sup>	20,000 m <sup>2</sup>	17,000 m <sup>2</sup>	- 09.4
Building density <sup>e</sup>	85m <sup>2</sup> /unit	49m <sup>2</sup> /unit	+ 42.0

d. Stated to two significant figures

e. Existing car parking spaces are within the site footprint, whilst in the proposed layout they are underground

Due to the increased number of units as per proposed layout, a significant increase in population density was envisaged. Although such a density is usually discouraged, especially in highly populated countries like Malta, it is beneficial in both environmental and political terms. The status of caravan sites in Malta is similar or worse than the site at GHadira. Most units are not only in breach of planning and public health legislation, but are erected on public land without any prior notification and/or authorization from the Malta Government Property Department. Politicians are very sensitive to the fact that residents are equivalent to votes; their number is what matters at election time (Reichhardt, 2004).

Consecutive governments in Malta have long been aware of such squatters and other infringements being undertaken

on public land. The political scenario in Malta has been dominated since 1966 by two main political parties. The electoral system in Malta is based on proportional representation by means of the single transferable vote. Given the closely knitted, extended family structure in Malta, every vote counts. The ripple effect of a political decision significantly impinges on the political spectrum. The collateral damage that any political decision relating to say, GHadira caravan site, may have on the electorate is circa a half of the quota sufficient to elect a candidate of either political party to the national parliament.

Central Government administration considered the setting up of another camping site in the rural area further west of GHadira site. This implies further agrarian and ecological land being taken up for development and for other provisions required for the supporting infrastructure. This is a cost on the public coffers to accommodate a number of residents who wish to reside in caravans during the summer season. Thus, the proposed layout with the significant increase in the number of units strikes the proverbial two birds with one stone: it caters for additional caravan spaces, hence scoring political points, without exploiting the existing natural environment.

### Traffic and Waste Management

Vehicular traffic and parking at the caravan site as at present, is (1) a hazard to pedestrians, (2) a source of confusion given the reckless parking and (3) a source of traffic generated air pollution by vehicles driven at low speeds. Thence, to improve traffic management and parking on site, underground parking provisions were introduced in the proposed layout. This removes vehicular access, an index for sustainable urban environment (Newman and Kenworthy, 1999), within the existing settlement. Furthermore, material excavated from the site to form the underground parking spaces will be utilized in the concrete manufacture of buildings erected on site instead of the present caravan units, thus cutting down on (1) inert waste from the construction site (2) utilizing similar industrial mineral resource from elsewhere and (3) the environmental and financial costs involved in transportation of the excavated or building material.

Another dimension which was brought up through the meetings with the committee members of the Association was domestic waste management on site. Although refuse skips are regularly emptied, there exists a problem of odour generated from organic waste. This odour, a problem further augmented by the hot scourging sun characteristic of central Mediterranean summer climate, is a nuisance for both residents at the site and passers-by. To address this issue, waste chutes were introduced at a number of locations within the layout. These chutes are linked to compartments at the underground parking level which can be easily accessed by small refuse collecting vehicles.

### CONCLUDING REMARKS

Participatory engagement offers the intrinsic advantage that residents feel that they belong to the final product, the urban settlement. The interaction between the socio-economic, ecological and geocultural environs, which provide the

urban and development planning opportunities and challenges (Alberti *et al.*, 2003; Aina *et al.*, 2013), were the grounding of the design approach adopted in the redesign of the existing caravan site. The resulting main conclusions are listed hereunder:

1. The co-design of the proposed urban layout for GHadira caravan site is an effective exercise which illustrates the significance and tangibility of actively involving the locals in planning their built-environs (Cohen *et al.*, 2008; Ohmer, 2008). The resulting layout is more compact than the one existing on site and, despite of a significant increase in building density, it is environmentally sustainable and socio-economically sensitive;
2. Whilst taking into account the prejudice of the general public, the eco-inspired lobbies in particular, and addressing their concerns, the proposed urban design also takes into account (i) the needs of the community which established itself at this location nearly four decades ago, (ii) the existing characteristics of the site and (iii) the constraints arising from environmental and developmental planning policies. The proposed layout was indirectly co-designed with individual residents of the community through their respective participatory engagement in the urban design process; and
3. Given that the settlement is already present, originally parasitic, the proposed redesign of the same is mutualistic and aims to enhance rather than relegate the characteristics of the site through the mitigation of arising impacts on the surrounding environs. It is grounded in the local parameters arising from the place, scale, occupiers and general public.

The proposed redesign of the existing settlement at GHadira caravan site is a coherent and effective proposal and calls for an improvement of existing urbanization through a symbiotic relationship between the society and the built environment.

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