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Over the course of twelve weeks, Ebenezer Sustainability Consulting thoroughly examined, analyzed and evaluated the long term sustainability of the planned community, Torraccia di San Basilio. In accordance with your requests, Ebenezer examined whether:

- Torraccia is a sustainable development that will remain a viable, vibrant contributor to the traditional and changing landscape of Rome;
- The design of Torraccia fosters social and cultural engagement, and meets the needs of the community;
- The Torraccia model is appropriate for future developments.

The physical, social, economic, ecological and cultural character of Torraccia was incorporated in the assessments of the community's overall successes and failures. The case study of Torraccia began by outlining core infrastructure components of Torraccia – characterized as transportation, demographics, economics, and policy forces – in an attempt to understand the community of Torraccia in the greater context of the City of Rome.

The primary objective was to assess the long-term sustainability of Torraccia di San Basilio as Rome's current model of a planned community. Once the Torraccia model was completely evaluated, core findings, those which spoke to the sustainability of the area, were extracted from the study to develop a sustainable development criterion referred to as the "Nine Criteria of Sustainability." Based on the Torraccia case study findings, Torraccia does not exemplify a sustainable development. However, the Torraccia model has the potential to be sustainable contingent to replications of its positive assets, fulfillment of current incentives, and implementation of our suggestions.

Sincerely,

Nicole Eason      Tanneasha Gordon      Meredith Howell      Rebecca Macey      Alex Norton

**SUSTAINABILITY OF PLANNED PERIPHERAL COMMUNITIES:  
A CASE STUDY OF TORRACCIA DI SAN BASILIO**



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

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## **Executive Summary**

In last twenty years, the city of Rome has been experiencing a shortage of housing. The city government, Comune di Roma, has been faced with creating alternatives to alleviate this problem. The City has narrowed their alternatives down to two choices: revitalization of abandoned buildings or developing new planned residential communities on the periphery of Rome. This case study assesses the effectiveness and sustainability of the planned community, Torraccia, located on the northeastern periphery of Rome. The report provides an analysis of Torraccia as a model of a planned community which Comune di Roma may replicate for future developments to alleviate housing shortages as well as for new demands for housing. The document examines the sustainability of Torraccia in terms of nine outlined criteria: community stability, connectivity and accessibility, social space and organizations, social engagement, capital flows, residential economic sustainability, commercial economic sustainability, public services, and ecological health. Based on the analysis of the outlined criteria, Torraccia is not currently a sustainable development; however, future developments of planned communities could be sustainable with the replication of the Torraccia model's positive aspects and implications of connectivity, commercial and public service improvements. Future planned developments that desire to be sustainable should replicate the effective physical layout, demographics and public services of Torraccia, but should also incorporate better intercommunity connectivity, spatial design, commercial incentive, while implementing the provision of public services in initial development stages, and encouraging community participation. Torraccia, although a bedroom community, may flourish for years to come but it does not promote the social and economic stability required in sustainable developments. Aspects of Torraccia do not foster community commitment and thus, can easily fall prey to social degradation and insecurity. In order to alleviate housing shortages and address the demand for housing, while creating a sustainable development Comune di Roma must utilize the suggestions and amendments this case study provides.

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# SUSTAINABILITY OF PLANNED PERIPHERAL COMMUNITIES: A CASE STUDY OF TORRACCIA

In recent years, the City of Rome has been experiencing a shortage of housing. The City of Rome is growing economically and thus the demands of its constituents are increasing. There is an increasing demand for public services, infrastructure services, and most of all housing. The demand for housing is not a recent phenomenon for the City of Rome and is a normal trend of growing cities. The increasing need for housing in Rome is a product of the growing economy, changes in class structure, state policy regarding birth rate, attempts to legalize housing, and immigration.

As the economy grows, housing in the center typically converts into commercial spaces. The center is generally an attractive and popular market for housing and commercial units because of its accessibility to surrounding areas, historic character, employment opportunities, and commercial activities. Thus market price for housing is generally high to begin with. The commercialization of the limited spaces available in the center further increases the market price for housing. As a result of high prices and commercialization housing becomes scarce, living in the center becomes less desirable, and the demand for housing heightens. In short, with economic growth living in the center becomes more expensive and less feasible, and thus creates a demand for housing outside the center. The development of new communities and requalified<sup>1</sup> spaces becomes the response to this demand.

The rise in class structure also creates a demand for housing. As people rise in social class they tend to want to move and relocate in new areas that reflect their class status. People often desire to relocate which creates a new demand for housing. With increased commercial activity in the center people who desire to relocate generally move to suburban areas, on the periphery, that have reasonable access to the center. In addition, new affordable housing developments such as Torraccia that are designed to support young families have the potential to increase demand in housing. Italy is currently facing a birth crisis, having the lowest recorded birth rate in the world at 1.2 children per woman. The Italian birth rate is so low that the

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<sup>1</sup> Requalification is the Italian term for reusing existing Buildings for a new use.

government is offering incentives to couples who conceive a second child before the end of next year; couples who can meet the deadline will get a 1,000 euro payout from the state.<sup>2</sup> Therefore, supporting young families appears to be a goal and priority of the Italian state and thus creating housing for young families may be a future step for the City. Providing young families with affordable housing has the potential to address Italy's current birth crisis. Offering incentives such as subsidized or affordable housing makes financing a family larger than 1.2 children more feasible. In short providing young families with incentives such as affordable housing is an opportunity for the Italian state to tackle its current birth crisis.

Immigration and illegal subletting create a need for housing as well. The high amount of illegal subletting in Rome is partially due to immigration, but the student population also

accounts for a large number of the illegal housing situations. The Italian government is not only trying to address the high amount of immigration but also is attempting to provide for immigrants' housing need as well. Illegal subletting negatively impacts the market economy through unclaimed taxes, and the government

wants to curb this tax evasion.

According to McCarthy "more than

300 billion in revenue goes undeclared each year."<sup>3</sup> In addition to this, a landlord can drastically increase the price of a housing unit if he/she knows the unit will be illegally occupied by more people. In trying to legalize housing the city has to allow or initiate the building of units to house people that were previously illegally subletting. In short, growth in the economy, changes in class structure, state policy regarding birth rate, immigration and an attempt to stop illegal subletting potentially creates a need for housing development in Rome.

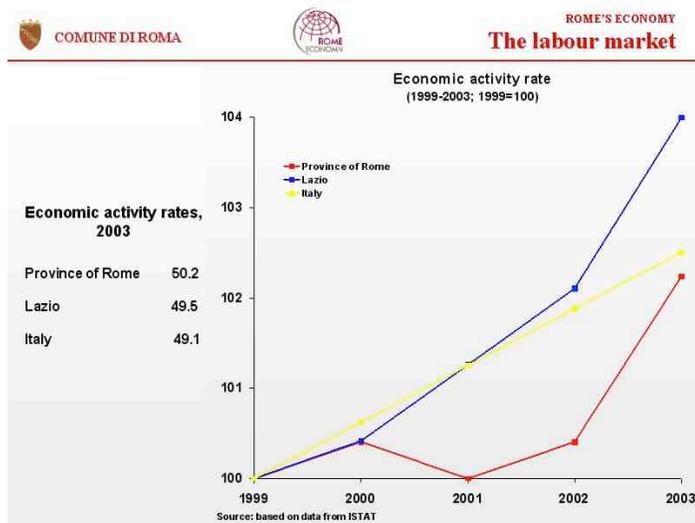


Figure 1: Economic Activity of Rome (www.romaeconomia.it)

<sup>2</sup> EURSOC 2 "Lay Back and think of Italy," Dec. 1, 2003, accessed April 18, 2005, [http://www.eursoc.com/news/fullstory.php/aid/179/Lie\\_Back\\_And\\_Think\\_Of\\_Italy.html](http://www.eursoc.com/news/fullstory.php/aid/179/Lie_Back_And_Think_Of_Italy.html)

<sup>3</sup> Patrick McCarty, The Crisis of the Italian State, St. Martin's Press, 1995.

In response to Rome's increasing housing need, Comune di Rome developed residential communities on the periphery of Rome. The planning department of the Comune di Roma designed a specific model for a planned community. Torraccia di San Basilio and Casal Monastero are two examples of this model which have been in existence for about ten years. The Comune would like to further understand the possibilities of sustainable development in the periphery before moving forward with more community development plans like the one executed in Torraccia. In continuing to determine the best way to meet the housing demands the City needs to know the possibilities and pitfalls of both requalification of already developed areas and the development of new areas. This report looks at the potentiality of the Torraccia model as a successful sustainable new development by examining the sustainability of Torraccia.

## **Objective**

The objective of this study is to provide an analysis of Torraccia to determine if the planned area is a sustainable community and a replicable design for future new developments by the Comune di Roma. The report will assess the community in terms of sustainability and will suggest adaptations or amendments that may be necessary for the model to become replicable throughout Rome. The document draws from informal observations and interviews, formal interviews, and data and information on Torraccia gathered through research and surveying. It is based in the findings previously drawn regarding the sustainability of the transportation, demographics, and economy of Torraccia; as well as an analysis of the policies important to the community. This study will bring these reports together to gain an overall understanding of the sustainability of the community and bring to light the replicable parts of the Torraccia model for development and those which need to be amended.

## **Definition of Terms.**

- *Planned Community* refers to any town or neighborhood built with certain guidelines or goals in mind emphasizing economic and social vitality. A good planned community evolves on the basis of local characteristics and design principles that enhance social and cultural integration around a central communal space. In effect, the planned community improves the well-being of the citizens and creates a balanced relationship with the local environment.

- *Sustainability* is the social and economic development that meets the needs of the current generation without undermining the future generations' ability to meet their own needs.
- *Sustainable Development* delivers basic environmental, social and economic services to all residents of a community without threatening the viability of the natural, built and social systems upon which the delivery of these services depends.

**Why Sustainable Development?** Sustainable development is comprised of economic and social development components which protect and enhance the natural environment and social equity. This broad definition conveys explicitly that there are three principal aspects—ecological, economic and social—and they are all interrelated. Furthermore, this description avoids trade-offs between the environment, economy and society. It states that any type of social or economic development is sustainable, provided that it protects and enhances the environment and social equity.

Development covers social and economic improvement in a broad sense. It may or may not involve economic growth. The emphasis is not on economic growth but rather on qualitative improvement in human well-being. In terms of Torraccia, an evaluation of the economic stability of commercial and residential areas must occur, specifically emphasizing qualitative improvement of the private and public economic opportunities of the community.

Protecting the natural environment is not intended to mean halting ecosystems to the extent that natural evolutionary and ecological processes cannot occur, but rather means keeping changes at non-catastrophic rates. The importance of ecological sustainability stems from the fact that the economy and society depend ultimately on the integrity of the biosphere and the ecological processes occurring within it. Nature provides human societies and economies with a complex life support system, comprising among other things air, water, food and a suitable climate for survival and the physical resources which are currently the foundation of economies. For this reason, social and economic development must be ecologically sustainable or the environment will reject the development; when this happens developments experience deterioration, decline, and environmental degradation.

Social equity implies a sense of “equal opportunity” rather than “equality.” It stresses equity between and within generations of humanity (inter-generational equity). Sustainability emphasizes social equity specifically through community stability and social engagement. The community stresses quality of life recognized from adequate social and public services for

everyone and no limitations for lower classes. The community grows together and individuals engage with one another. Social equity promotes social interactions within the community through social services and civic engagement, and it promotes interaction with the greater area to attract viable activities. Sustainable development makes social equity a necessity and strength for community development.<sup>4</sup>

Sustainability is a concern for communities because it determines the survival of a community. Communities that cease to be sustainable can collapse, incur tremendous poverty, or can become bedroom communities which lack economic and social strength. When a development lacks economic and social sustainability it also discourages community engagement, and community commitment which are components of a healthy society. Community commitment and community engagement safeguards against development crises that could cause decline. Sustainable communities maintain a level of social and economic vitality without compromising the local ecological or built environment so that the future generations can have similar “quality of life” experiences.

### **Torraccia di San Basilio Profile**

The newly planned and developed community, Torraccia di San Basilio, was non-existent before 1991.<sup>5</sup> Torraccia was developed in the early 1990s in an attempt to address Rome’s housing shortage. It is one of the most thoroughly planned communities in Rome, formed with two primary goals: to provide housing and infrastructure relief for the struggling community of San Basilio while creating a new urban fabric in the area that interacts with existing development.<sup>6</sup>

The main policies that allowed for and conditioned the development of Torraccia were Law 167 and the second Piano Edificio Economico Popolare (PEEP II). Italian national Law 167 allowed the Comune di Rome to expropriate undeveloped land in order to develop 2,500 new middle income housing units in Torraccia to help solve the housing crisis. “The act of eminent domain became available to Italian planners and developers and is still used today under

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<sup>4</sup> “Communities and Livelihoods,” International Institute for Sustainable Development, 1999 accessed Apr. 14, 2005, <http://www.iisd.org/communities.htm>.

<sup>5</sup> Ebenezer Sustainability Consulting, “Demographic Issues Analysis,” 2005 (Appendix C)

<sup>6</sup> Ebenezer Sustainability Consulting, “Economic Sustainability: Residential and Commercial,” 2005 (Appendix D)

the framework of Law 167.”<sup>7</sup> Law 167 was the precursor to the Piano Edificio Economico Popular (PEEP) laws and other public improvement laws that pertain to Rome and especially to the development of Torraccia. PEEP II seeks to bring infrastructure services to communities that were illegally built and are not connected to the city electric grid or sewer and water system. PEEP II provides funding for new developments that bring sewer, water, electricity and other infrastructure services into these illegally built areas. PEEP II funding paid for the development of Torraccia; the construction of Torraccia involved the tunneling of infrastructure from the center of the city out to Torraccia, then to areas of San Basilio that were in need of infrastructure services.

Torraccia di San Basilio is located on the northeastern periphery of Rome. The confines of Torraccia can be identified as the area enclosed by Via Francesco Paolo Bonifacio (northern), the Grande Raccordo Anulare - which runs adjacent to the development (green line), Viale Giuseppe Cappelletti (south), Via Nino Tamassia, and Via Vito La Mantia.

There are two exit and entry ways available to Torraccia: the Grande Raccordo Anulare (Raccordo) and through San Basilio. Traffic and transportation conditions are highly dependant upon the personal automobile (the average vehicle per household in Torraccia is 2 cars per family). Buses 404 and 444 are the sole modes of public transportation that service the area. The 444 makes 85 trips daily from Ponte Mammolo through San Basilio and loops through the neighborhood of Torraccia servicing ten bus stops.<sup>8</sup> Bus 444 is easily accessible, with convenient stops on the two main commercial streets, Via di Menichella and Via Carlo Arturo Jemolo. The first stop entering into Torraccia is located on Via Rosario Nicolo, and the last stop on the way out of Torraccia is Via Giuseppe Cappelletti. The fifth bus stop of the Torraccia loop is on Via F. P.



Figure 2: Location of Torraccia in Rome

There are two exit and entry ways available to Torraccia: the Grande Raccordo Anulare (Raccordo) and through San Basilio. Traffic and transportation conditions are highly dependant upon the personal automobile (the average vehicle per household in Torraccia is 2 cars per family). Buses 404 and 444 are the sole modes of public transportation that service the area. The 444 makes 85 trips daily from Ponte Mammolo through San Basilio and loops through the neighborhood of Torraccia servicing ten bus stops.<sup>8</sup> Bus 444 is easily accessible, with convenient stops on the two main commercial streets, Via di Menichella and Via Carlo Arturo Jemolo. The first stop entering into Torraccia is located on Via Rosario Nicolo, and the last stop on the way out of Torraccia is Via Giuseppe Cappelletti. The fifth bus stop of the Torraccia loop is on Via F. P.

<sup>7</sup> Ebenezer Sustainability Consulting, “Policy Issue Analysis: Torraccia,” 2005 (Appendix E)

<sup>8</sup> Ebenezer Sustainability Consulting, “Transportation Issues Analysis,” 2005 (Appendix B)

Bonifacio and is the technical end of the 444 route. Bus 404 services Torraccia's neighboring planned community of Castel Monastero; it has one tangential stop serving Torraccia on Via Giuseppe Cippi on the eastern periphery of Torraccia.

Torraccia takes on a homogeneous garden city style<sup>9</sup>, surrounded by a greenbelt.<sup>10</sup> Rather than the traditional radiating layout, Torraccia is laid out in a grid pattern design with a commercial spine as its core; the commercial spine is a linear interpretation of the radiating model, which accommodates

Torraccia's space restrictions.

Located at the center of the commercial spine is Piazza Gaspare Ambrosini, the neighborhood's central piazza. Piazza Gaspare Ambrosini is enclosed on all sides by six story apartment complexes.

North of this is Piazza Paolo Rossi – essentially a traffic ring located in front of the neighborhood's newly constructed school.<sup>11</sup> The buildings

and apartments range from three to seven stories. The apartment buildings are designed in a horseshoe shape with inner courtyards containing foliage, walkways and an underground garage. Overall the neighborhood is pedestrian friendly: there are sidewalks on both sides of the street with crosswalks at every intersection, and the traffic intensity within the neighborhood is moderately low.

Torraccia is a self proclaimed “quartiere dormitorio” or bedroom community, primarily catering to young middle-income families. Torraccia's population is approximately 9,000 inhabitants with children accounting for roughly half of the inhabitants. The typical family structure in Torraccia consists of two working parents supporting 2.5 children. Approximately



Figure 3: Layout of Torraccia

<sup>9</sup> Ebenezer Howard, *Garden Cities of To-morrow*, London, 1902.

<sup>10</sup> A green belt refers to undeveloped green spaces located on the outskirts of the neighborhood.

<sup>11</sup> The construction of Torraccia's new elementary and matera school is now in it's finishing stages. Both schools are set to open this coming September 2005.

80% of the families in Torraccia are dual-income households. Adults are usually, between the ages of 30 and 50, and employed. On average each family owns two cars and a € 350,000 apartment – which is most likely bought as opposed to rented.

Torraccia is a mixed-use community with a linear commercial strip, which provides both public and private commercial services, surrounded by residential space. Torraccia’s commercial strip is located on the backbone of the neighborhood: between Via Carlo Arturo Jemolo and Via Donato Menichella. Public and private commercial services available along this backbone include: financial, children oriented, convenience, medical, beauty, electronic, clothing, profession, and household, among other retails. Currently, there is a 60% vacancy rate of commercial units in Torraccia and newly occupied spaces are only open for about six months on average before closing.

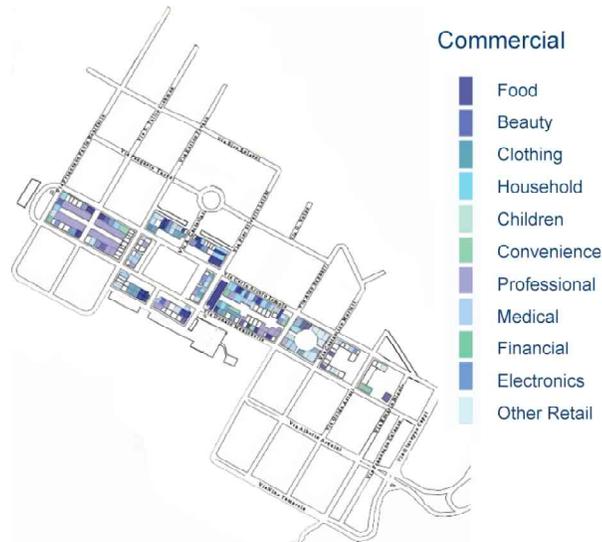


Figure 4: The Commercial Spine of Torraccia

Is Torraccia di San Basilio an example of a sustainable development? The community has lasted ten years without deterioration with some economic activity. The natural environment appears to be in good condition and no activities appear to jeopardize the future of the environment. However, Torraccia is still currently a bedroom community. Bedroom communities do not promote social and economic stability required in sustainable developments. The general impact of bedroom community means no commitment to community, leads to vacant commercial space and is easily prey to social degradation and insecurity. This does not exemplify sustainability nor does it exemplify a flourishing community which is the foundation of healthy society.<sup>12</sup>

To assess the long-term sustainability of Torraccia and thus determine the effectiveness of Torraccia as a model for future planned community development, nine criteria were used.

<sup>12</sup> “Sample Criteria for Evaluating the Sustainability of Community Ideas and Projects,” Minnesota Office of Environmental Assistance, accessed Apr. 24, 2005, <http://www.moea.state.mn.us/sc/criteria.cfm>.

The nine criteria analyze different components of the neighborhood that speak to the overall sustainability of the community. These criteria are characterized as: community stability, physical connectivity and accessibility, social space and organization, social engagement, capital flows, residential economic sustainability, commercial economic sustainability, public services, and ecological health. According to the outlined criteria, Torraccia is not currently a sustainable development; however, future developments of planned communities could be sustainable with the replication of the Torraccia model's positive aspects and implicating connectivity, commercial and public service improvements.

### **The Nine Criteria**

**Community Stability.** Community stability refers to the demographic trends in a community. Examining demographic trends provides a glimpse into the problems that a community may face in the future and ways to anticipate these problems. As previously mentioned, stable demographic trends will ensure that the services brought into the community will support the current generation but also future generations without having to impose large changes on the community. Torraccia was built with the intention of bringing in young, middle-income families. Torraccia has about 9,000 inhabitants almost half of which are children. Data has shown that most of these young families will remain in Torraccia at least until their children finish school.

Moderate population turn over is also a component of a stable community. Without moderate turnover, the population would age and services would have to keep changing to meet the needs of a new demographic, which potentially strains economic sustainability and the ecological sustainability of the community. The conversion of old services into new services, with new construction and refurbishments that are required in the conversion of services, impact the economics and environment in the community. Additionally, the moving out of some residents or families allows for families that remain in Torraccia to get a foothold in the community. This foothold is achieved because creation of space allows those who grew up in Torraccia move back into the community with their own families in future years. The remaining residents also promote the maintenance of the physical and social character of the community, because they a growing interest and investment in the community socially and economically.

Furthermore, the current atmosphere of Torraccia is that of a safe community, good for raising a family that will continue to attract young families. This is due in large part to the construction of military cooperatives that brings an informal protecting body to the community. The construction of elementary and pre-schools in the community, will further add to the community's stability increasing attractiveness to young families.

However, there cannot be too much turnover. High population turnover weakens social stability, depreciates the environment and also strains the economy of the neighborhood. There must be a moderate amount of population turnover that allows stability in the community in terms of economics, ecological, and social balance. If the demographics of Torraccia remain stable with some families moving out to make room for new young families, commercial services and social services will have long and sustainable life. The key to accommodating and ensuring demographic stability is participatory planning. Allowing for the engagement of residents in the community would make Torraccia more desirable, as the needs of these families are addressed. In turn this would ensure that these young families remain dominant in the community. In short the community stability of Torraccia is strong; Torraccia has moderate turnover and the military residents create a feeling of safety within the community. If the city were to stimulate engagement among and with young parents and children and address their needs, future developments like Torraccia would be more attractive.

**Physical Connectivity and Accessibility.** The way in which a community is linked to the surrounding environs has a large bearing on its' commercial and social state. The physical design and layout of the community also have an impact in this way. In a planned development like Torraccia the design of the community is thus crucial to its sustainability. The connectivity and interactions the design promotes or prohibits can greatly impact the social and economic sustainability of the community, and the ecological sustainability as well, in terms of car pollution. Determining the sustainability of connectivity and physical designs requires looking at the interaction between the roads in the community and the roads that lead out of the community as well as the layout of the housing and commercial units.

Torraccia di San Basilio is laid out in a linear grid pattern and is only connected to other neighborhoods by two portals: the Raccordo and Via Nicolo into San Basilio.<sup>13</sup> The road that

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<sup>13</sup> "Transportation Issue Analysis"



sides of the commercial strip,<sup>17</sup> and the commercial strip is within two to three blocks of all residential units. Thus the designed accessibility of the commercial strip keeps car traffic in the community at a minimum, increasing ecological sustainability. It also encourages the creation of the strong social fabric common to the Italian ideal of the piazza design by encouraging foot traffic from store to store.

The rigid structure of the housing units' design in Torraccia may limit the carrying capacity of the neighborhood. It does not accommodate expansion because most of the units are filled and there is no land for new building. This creates challenges to demographic stability that threaten the sustainability of the community. In future developments like Torraccia this problem could be avoided by having more flexible parameters. In large part, the commercial spine design of Torraccia represents a good model for a sustainable development; however future developments need to be more oriented toward connecting the new community with its surrounding community.

**Social Space and Organizations.** The design of the social spaces and the provision of social services are two of the most important determinants of the sustainability of the social relationships in Torraccia. The performance of the physical design of Piazza Gaspare Ambrosini, the commercial spine, and the social association for the sustainability of the community gives incite on the presences of social relationships in Torraccia. A sustainable social space is an area in a community where the people of the community come to interact. This space should be accessible to all members of a community and should be maintained in such a way that is safe for all, now, and into the future. If these characteristics are met the social space can become the center of a strong urban fabric of social networks between members of the community, making the community safer and promoting cultural vibrancy.<sup>18</sup>

A sustainable social organization is one that is used by a variety of members of the community to be sure that the service is meeting all the needs of the community. Ideally this would be a participatory organization that provides some services to the community, and has lobbying power outside the community where the community is united behind the organization's

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<sup>17</sup>*Ibid*

<sup>18</sup> Jane Jacobs, *The Death and Life of Great American Cities*, Random House, 1961.

message. The Associazione Culturale di Torraccia (ACT) is the main social organization in the community.

In Torraccia the social spaces were designed to be interconnected with the economic spaces at the center of the community. Three blocks between Via Jemolo and Via Menichella extending southwest from Piazza Ambrosini represent the main social and commercial spaces with the ideal social space being the piazza. The primary functions of these spaces and the organization is to be social facilitators within the community. Although the social spaces and organization within Torraccia shows strong potential, in future developments changes need to be made that promotes stronger sustainability in order to fulfill their primary function.

*Piazza Gaspare Ambrosini.* The piazza is the traditional center of Italian social life. Throughout the center of Rome, walking into a piazza from the narrow streets gives people a sense of openness and the stores and restaurants opening onto the piazza give a sense of community and promote interaction between the people of the community. The design of Piazza Gaspare Ambrosini seems to promote the opposite feeling. The piazza is surrounded by commercial units with six stories of residential units above. The residential units span the gaps in the commercial units where the roads pass. This gives the



Figure 6: Looking Out from Piazza Ambrosini

entrances into the piazza a cave-like character. The piazza itself is surrounded by some of the tallest building in the community meaning that entering this space, enclosed on all four sides by six stories, is to become more enclosed rather than entering an open space. Within the enclosure there is a playground for children and benches and social space. However there are streets that surround the playground and separate it from the commercial store fronts and hedges in front of the stores further this separation. Thus there is none of the typical spilling of the commercial space into the piazza. This design is not conducive to creating a strong, sustainable social space. The openness of Torraccia that is so appealing to residents is lost as one enters the piazza. Also,

the commercial spaces around the piazza suffer from the design. With the commercial spaces struggling there is even less incentive to enter the piazza.

As a result of this design the center of pedestrian traffic has become the supermarket. Without a strong draw to the socially oriented piazza the residents instead focus mostly on their economic needs in their travels around the community. The supermarket is located just off of the piazza. It is located in a shopping center with shops accessible from the interior and exterior of the open space. The shopping center is designed with economics in mind not social interaction, so when people come to shop, they often focus on this single task and social exchange is limited. In future developments a grocery store placed on a central piazza that was open and not segmented by roads would help make the piazza a viable social space by integrating the commercial and social centers. Without a strongly functioning social space to support social interaction there would need to be strong social organization to bring the community together.

*Associazione Culturale di Torraccia.* The ACT is the main social organization in Torraccia. It has a building on a large property to the north of the commercial spine of Torraccia. They put on community plays, project AS Roma games on Sundays, and provide a variety of services such as aerobics classes. This association could be a strong social institution in the community if all of the community participated, but unfortunately this is not the case. About ten percent of the population of Torraccia is elderly, yet it is the elderly that make up the majority of the active participants in ACT. This means that the majority of the community is underrepresented, implying that ACT cannot lobby for the actual needs of the community because without participation by the families there is no way for the association to know what problems are most important for the community. Many of the potential benefits of the association are lost because the young families do not have the time or the interest in participating.

Like many other aspects of the sustainability of Torraccia, the social spaces and organizations in the community are in need of help. The piazza design is important; if it is supposed to be the social center of the community then it must be designed to be inviting and at the center of pedestrian traffic. In the case of Torraccia this would have meant making it less daunting, putting the supermarket on the piazza, and avoiding separating the playground and social space from the commercial space with a road. Creating a strong social organization is more difficult, however if other social aspects were stronger participation might improve in the

association. This requires being sure the social organization is operational at the start of the community and being sure other social networks are able to flourish through the rest of the communities design. Also if the residents of the community had schools and retail shopping in the community they might have more time to participate in the ACT.

**Social Engagement.** Another criterion for assessing the sustainability of Torraccia is social engagement, the interactions of the residents both within Torraccia and in the context of neighboring San Basilio. Torraccia was supposed to create a new urban fabric that wove into the existing urban fabric of San Basilio. Intercommunity social engagement will ensure that the residents will look after each other's needs and the community will remain strong. Intracommunity social engagement integrates the community into the greater context that can help support Torraccia in times of internal weakness.

*Interactions Within Torraccia.* Torraccia provides many commercial and social services, such as a children's community theater, toy stores and playgrounds, and a private pre-school; and soon there will be an elementary school and a regional recreational center in the area. There is also a cultural community center in the neighborhood which is a focal meeting place for sporting events, community plays and various other activities. However, at the opening of the community many of these services did not exist and as the original residents of the community moved in no strong social engagement was fostered. Observations of everyday pedestrian traffic shows that most pedestrian traffic is very focused on tasks and there is not a lot of interaction between residents passing each other on the street. Even the parents watching their kids play in Piazza Ambrosini are not overly engaging of each other. There are few posters up in community and those that are up are months out of date. Even in the ACT, which provides space for community performances and lobbies for city investment in Torraccia, participation is mostly by the elderly who make up only ten percent of the population. These indicators of poor social engagement mean that the community is becoming isolated within itself and that there is no general concern for the wellbeing of the development; a potentially dangerous situation as the community evolves and problems arise. With strong social networks these problems might be circumvented through community action, increasing sustainability.

The fact that Torraccia is car friendly and that most residents work outside the community contributes to this problem. Most of the people interviewed own and use a car as their most common means of transportation. This exemplifies a culture of individuality where

all residents commute in their own car and have less connection to the space that is accessible by foot. One of the positive aspects of Torraccia is its pedestrian friendly streets, which allow parents to enjoy the afternoons with their children, and allow the elderly to take leisurely rides on their bikes around the neighborhood, but the wide streets are most often used by cars traveling in and out of the community. In terms of time alone Torraccia spend most of their active hours outside of the community with jobs outside the community and kids going to school outside the community. Torraccia residents are only using their apartments to eat a private dinner and sleep.

Torraccia's intercommunity social sustainability should increase with the opening of the recreation center and elementary school. The opening of these public institutions will potentially allow local residents to spend more time in the community. Interacting with each other instead of the residents of various other communities (near where their work or their children go to school) the residents of Torraccia will build social connections that will increase the sense of community and the sustainability of the community because with social engagement comes emotional investment in the wellbeing of the community.

*Torraccia di San Basilio.* Torraccia was designed to be an expansion of the neighboring community of San Basilio. It was created with two goals: to create a new urban fabric in the San Basilio area and to provide housing and infrastructure relief for struggling San Basilio. The latter of these two goals was met, but the former has not yet been achieved. As a result of a lack of educational facilities in Torraccia, Torraccia's children are going to school in San Basilio.<sup>19</sup> This fosters intracommunity relationships, but is also one of the major reasons for the lack of intercommunity social connection. The fact that Torraccia does not meet all the needs of its residents means that surrounding communities end up accommodating these needs. The solution of building educational facilities in Torraccia might improve the sustainability of this small community at the expense of the sustainability of the larger community.

Torraccia is taking on a different character than San Basilio. As the surrounding communities become filled with single working class individuals,<sup>20</sup> Torraccia is a community of young middle income families. The idea of placing a middle income development adjacent to a struggling development, to increase property values and quality of life in the poorer area, has long been practiced in planning. However this only works if a social connection can be made

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<sup>19</sup> "Demographic Issues Analysis."

<sup>20</sup> *Ibid.*

between the two communities. The needs of San Basilio are going to be different than those in Torraccia, making it difficult for the communities to interact.

One way to ensure an intracommunity interaction would be to create intracommunity economic dialogue. There is little interaction of this kind with the possible exception of some food shopping and home improvement stores.<sup>21</sup> The commercial space in Torraccia could allow for connection as the needs of single San Basilians could be catered to, but only if the connecting transportation corridors become more efficient and businesses find it affordable to move into Torraccia. The current design of the roads segregates Torraccia from San Basilio by moving traffic flows around Torraccia.<sup>22</sup> These are the most successful sectors of sale in Torraccia and attract some outside shoppers from San Basilio.

Torraccia's current interaction with San Basilio is not entirely sustainable. There is still a sense of disconnect among the residents of the two communities. However Torraccia and its sister development Castel Monastero cooperate on many projects and lobbies,<sup>23</sup> but again this only involves the minority of the residents of Torraccia in the ACT or the commercial association. Thus the social engagement of Torraccia with the surrounding communities is not strong, but also not inexistent. The regional recreation center and the increased connectivity will help Torraccia in this facet of sustainability, and for future developments having these measures from the beginning would increase the construction of these social networks immediately. In future developments incentives that gave, for example a San Basilio entrepreneur some commercial space in Torraccia would increase intracommunity interaction and help the poorer surrounding community capitalize on the introduction of the middle income development.

**Capital Flows.** Capital flow is the path that money takes as the residents of a community earn and spend their incomes. An economically sustainable community is neither completely enclosed nor completely dependant on outside sources of income.<sup>24</sup> This protects against internal collapses that lead to spiraling decline in the first case and metamorphosis into a bedroom community with no investment in the community in the second case. The middle

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<sup>21</sup> "Economic Sustainability: Residential and Commercial."

<sup>22</sup> "Transportation Issues Analysis."

<sup>23</sup> The two communities combined to lobby for the extension of metro line B and the building of the post office in Torraccia.

<sup>24</sup> "Economic Sustainability: Residential and Commercial."

income residents of Torraccia represent a strong flow of money into the community, creating potential for a balanced economy.

Unfortunately this ideally sustainable capital flow is not realized in Torraccia because there are very few Torraccia residents who work in Torraccia and those employed in Torraccia live outside the community. Torraccia residents do not own businesses in the community and so any money that is spent in the community is not being circulated around the members but escaping with the business owners and employees commuting home every night. Thus the lack of ownership of Torraccia businesses by Torraccia residents impedes the sustainability of the community; it squanders the potential sustainability that could come from the income coming into the community from the extra-community employment of most of the residents.

The other aspect of Torraccia capital flow that is detracting from the economic sustainability of the community is that Torraccia residents fill most of their retail demands outside the community.<sup>25</sup> The money that they are earning from outside sources is being redistributed outside of the community, before even having the potential to be circulated in Torraccia. This lack of support for a commercial economy means that little money is being reinvested into the community causing the vacancy in commercial space and further decreasing the demand in the community. The vacant commercial space in the community not only represents an unsustainable economic development, but is also detrimental to the social sustainability and ecological sustainability of the community. The lack of ownership or proprietorship of Torraccia businesses by Torraccia residents hurts the economic sustainability by not investing any capital in the community. More importantly, this lack of financial investment in the community brings with it a lack of social investment because the residents have no direct economic interest in maintaining the commercial spaces. The nature of the capital flows of Torraccia has wide negative effects on the sustainability of the community.

There are several suggestions that might improve this situation in neighborhoods designed using the Torraccia model. With the development of schools in Torraccia, parents and children will spend more time and likely more money in the community, creating economic and social capital flows that would increase sustainability. More connectivity with surrounding communities, such as the extension of the metro line out to Torraccia and the new connections

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<sup>25</sup> *Ibid*

between Torraccia and San Basilio, will also lead to a more stable economy with San Basilio demand to supplement Torraccia demand. This would be especially helpful if there were incentives for Torraccia residents to own business and work in Torraccia. This would increase intercommunity capital flows and increase the community's interest in the nature of the commercial units in the community.

**Residential Economic Sustainability.** The overall sustainability of Torraccia or any development requires a sustainable economy. There are two main components that determine economic sustainability: the sustainability of the residential economic situation and the sustainability of the commercial economics. Residential economic sustainability is characterized by strong and stable income that supports the community and fosters economic independence without separating the community from the rest of the city. Residential sustainability also requires a strong residential real estate market. The design of Torraccia has largely promoted these characteristics.

*Income of Residents.* Most of the residents of Torraccia are young families. According to the ACT 80% of these families have two incomes. The families are largely middle-income in part because of these dual incomes, and thus have disposal income.<sup>26</sup> This, coupled with the requirements of providing for young families implies that the residents of Torraccia represent a strong consumer market. The families bring this income in from outside sources. The residents of Torraccia moved into the community already employed and still commute to their previous jobs throughout Rome. This increases the stability of the economic situation of the residents. They are not dependant on the rest of the community for their income so a crisis within Torraccia is not going to directly impact the income of the whole community. This variety creates sustainability, as does the middle income status which enables reinvestment in the community.

Unfortunately, this reinvestment does not occur. There are very few examples of residents of Torraccia who work in Torraccia. The fact that few of the residents are earning their incomes in Torraccia implies a strong trend toward the creation of a bedroom community. Because most Torraccia residents were already employed outside the community few of them were interested in opening businesses or working within the community.<sup>27</sup> This coupled with the fact that the residents of Torraccia fill their demands outside of the community, means that there

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<sup>26</sup> *Ibid.*

<sup>27</sup> *Ibid.*

is no interaction and recirculation of the outside income within Torraccia. This separates the residents from each other. Some locally owned businesses would ensure interaction between members of the community on an economic level that might build social interaction as well.

Although it is favorable that Torraccia residents bring in outside income, it is also important to have localized employment. The residents are interconnected with the greater community which fits Torraccia into the greater fabric of Rome, they are middle income, and likely to spend their income in support of their children. If the sustainability could be improved it would be in the form of residents with incomes coming from Torraccia. This would indicate recirculation of money in the community that bringing social interaction which guards against the separation and individuality of a bedroom community. Currently, residents bring in most of their income from outside the community so few of the residents have a strong economic interest in maintaining the community.

*Desirability of the Community.* Another aspect of the residential economic sustainability is the real estate value of residences. Torraccia's residential real estate has gone up 150-200% in the last ten years. Even with this, the units are over 90% occupied and resale is not difficult.<sup>28</sup> Torraccia is obviously a desirable place to live. This represents a success for the city. Even in the declining surroundings of San Basilio, Torraccia is popular among current residents. The residents say that they do not want to separate themselves from San Basilio and have no fear of outside residents entering the community. This is in large part due to the presence of many military personnel in Torraccia. The construction of the housing units of Torraccia was done by a number of cooperatives made up of carabinieri, police men, or employees of foreign embassies. These residents provide the community with a sense of safety that allows children to hang out anywhere in the community night or day. Therefore fear is not a factor keeping the residents from interacting socially. This safety should encourage economic activity in the community and add value to the residential real estate.

There is evidence that many of these military people will leave the community when their service is over.<sup>29</sup> This has positive and negative effects on the community. When these people move out, new young families can move into the community maintaining demographic stability and retaining the image of the community as family oriented. However, once a residential

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<sup>28</sup> *Ibid.*

<sup>29</sup> Nico Favia, personal interview, Apr. 28, 2005.

building is constructed by a cooperative there is no requirement that the resale also be to members of that the cooperative group. Therefore, as carabinieri move out of Torraccia, their apartments may be sold to non military personnel. The sense of safety that adds so much to the property value of residential real estate will start to depreciate. The informal presence of the police will be gone and this could diminish the feeling of safety within the community.

The policy of attracting young families to the community, and awarding building contracts to military and embassy employee cooperatives has created a strong residential economy in Torraccia. The dual income families employed before they moved in are a strong source of extra-community income, and nearly 30% of employed Torraccia residents work in the public service sector in jobs they will hold for life. Thus, the income flowing into Torraccia is sustainable.<sup>30</sup> Also, middle income families suggest that there is a large amount of disposable income that will be spent on the children's needs and desires creating a strong commercial market. Bringing in military public servants also created a sense of safety ensuring the value of the real estate remains high. However, in future developments, programs that provide incentive for residents in Torraccia to work and open businesses in Torraccia would help avoid the evolution of a bedroom community by circulating social and economic capital as people shopped at each others stores within the community.

**Commercial Economic Sustainability.** One of the most important aspects of the sustainability of any community is the prevalence and performance of commercial entities in the community. Commercial economic sustainability requires a variety of businesses in the community that service the community and neighboring communities. Sustainability is also strengthened by ownership of businesses by residents of the community. Investment in local businesses by Torraccia residents strengthens the commercial sector and creates a stronger connection between the community and its residents. If residents have strong vested interests in the community they are more likely to want to maintain commercial activity and capital flow within the community.

*Ownership of Commercial Businesses.* As examined above there are few commercial businesses owned by residents of Torraccia. Furthermore, there are not a large number of successful businesses in the community. Developers were allowed to sell the commercial units

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<sup>30</sup> The Italian constitution prohibits laying workers off.

at a free market price, inflating the value of the commercial space to make a profit on their investment. This led to low purchasing activity and low investments in commercial units along commercial strip. As a result many of the residents of Torraccia began to shop elsewhere and continue to shop elsewhere today. Currently there are many vacant commercial spaces and the value of commercial real estate has dropped 30-40% in the ten years of Torraccia's existence. There are large numbers of businesses that have converted second floor space on the commercial strip into profession offices. These second floor units directly above the commercial space are the least valuable spaces in the community and professional offices that occupy these units do not need street connection to operate.

A weak commercial sector puts Torraccia on a path toward a bedroom community. Without commercial vibrancy the community serves only as a place to sleep; it does not bring in people from surrounding neighborhoods, and there is less incentive for members of the community to socialize. These negatives are prevalent even before considering the low ownership of Torraccia businesses by Torraccia residents. Thus the poor performance of the commercial economy in Torraccia may be the most threatening phenomenon to the sustainability of the community. The performance of the commercial sector is tied to the demand that is present in Torraccia and the characteristics of this demand are thus crucial to the sustainability of the community.

*Demand in Torraccia.* The city created a system by which the developers that built Torraccia tried to profit on their investments by inflating commercial real estate prices. When business owners did not move in right away because of these high prices, residents of Torraccia took their business elsewhere forgoing possible convenience because of lack of supply. This led to the failure and exodus of businesses further driving down the demand of Torraccia residents. Only one third of Torraccia residents shop for items other than food within the community. Most residents shop in other peripheral areas at big-box stores and other discount locations.<sup>31</sup> There is enough commercial space in Torraccia to provide for a vibrant commercial district that could be a convenient economic center for Torraccia and San Basilio residents. The poor performance of most sectors can thus be attributed to poor marketing of initial commercial space, value shopping at department stores, and the commuting character of the residents of Torraccia. These are problems that can be addressed in future Torraccia modeled development.

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<sup>31</sup> "Economic Sustainability: Residential and Commercial."

There is some demand for commercial activity in Torraccia. The most successful sectors are: food, professional offices, and home maintenance. The professional offices serve a city wide demand that has a stable flow of clients. These offices do not rely on interaction with the street or convenience to attract customers.<sup>32</sup> This is a sustainable source of demand because the medical, financial consulting, engineering, and other professional services do not need to be located close to any community and thus these businesses can continue to draw clients from all of Rome. Outside customers strengthen the sustainability of commercial entities in Torraccia because they are not entirely reliant on local demand. The workers of these professional offices are also participants in the most important sector of the Torraccia economy, food.

The residents of Torraccia shop at the grocery store because of its convenience, and the children hang out at the pizzerias and bars after school to get a snack and socialize, but the professional employees are the supporters of the cafes and pizzerias during the day when Torraccia residents are gone. The importance of the demand of these professionals is evident in the fact that there are only three restaurants in Torraccia to serve the 9,000 residents. It is evident that without the demand of the professionals during the day it is difficult for a food establishment to stay afloat in Torraccia. The importance of Torraccian and outside customers in sustaining an industry is evident in the food sector. The professionals and their clients frequent the cafes and pizzerias in Torraccia and offer these establishments consistent business, whereas the restaurants do not have consistent thriving businesses because they depend only on the demand of Torraccia. Thus, not only is inter- and extra-community ownership of businesses important for sustainable development but local and foreign proprietorship is as well. Torraccia is only sustainable in the sectors that have attracted outside clientele: the professional services, food sector, and the home improvement sector.<sup>33</sup> If there were more access between San Basilio and Torraccia more exterior demand could be generated by supplementing the Torraccia demand with new demand of the greater community. In short, with more connection and intracommunity commercial activity Torraccia would become part of the social urban fabric of San Basilio.

Developments like Torraccia need to be sure that demand and commercial success is not undercut by inflated initial commercial unit prices. The city needs to be sure that commercial units are being filled as residential units are being filled to ensure that the theoretical

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<sup>32</sup> *Ibid.*

<sup>33</sup> *Ibid.*



interaction. The presence and use of these facilities in Torraccia will be used to analyze the sustainability of Torraccia di San Basilio in terms of its ability to provide an adequate amount of public services to the residents.

*Post Offices.* There is one Post Office in Torraccia that was brought into the community recently in response to the desires and lobbying of the commercial associations of Torraccia and Castel Monastero. Poste Italiane Spa, a privatized company created in 1998 to take over the obsolete state run system, has one of its almost 14,000 offices along Torraccia's commercial spine.<sup>34 35</sup> The office is also in close proximity to the Via F.P. Bonifacio bus stop of bus 444, allowing it to be accessed by residents and non-residents of the neighborhood who might use public transportation to commute in and out of Torraccia. Poste Italiane provides a number of services that allow citizens to handle finances, including reception of pensions and salaries and bill payments, communicate electronically, in addition to another package of integrated postal services.<sup>36</sup> These services provide a service for not only the residents of Torraccia but also attract neighboring residents of Castel Monastero and San Basilio increasing social sustainability, and the Post Office is a main reason why Torraccia has become a popular place for professional offices.<sup>37</sup> Thus the work of the community to bring in this service has greatly added to the sustainability of Torraccia.

*Banks.* There are three banking branches located in Torraccia; all are full service banking centers that allow for customer-teller interaction, in addition to automated teller services. Each branch represents a different banking company and presumably, each one has a similar offering of services with some distinguishing features tailored to a specific clientele. The banks are distributed evenly along the commercial strip and are probably sufficient to serve the 2,500 families living in the community.

*Schools and Recreational Facilities.* An elementary school is scheduled to open in Torraccia in September of 2005 which is a positive addition to the neighborhood considering that there is a large population of school-aged children inhabiting the community. The indirect

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<sup>34</sup> Internet News. [www.internetnews.com/bus-news/article.php/38031](http://www.internetnews.com/bus-news/article.php/38031). Created 8 September 1998; accessed 15 April 2005.

<sup>35</sup> Poste Italiane (online). <http://www.poste.it/en/azienda/index.shtml>. Accessed 15 April 2005.

<sup>36</sup> *Ibid*

<sup>37</sup> "Economic Sustainability: Residential and Commercial."

positive affects of this development are numerous and the issue of schools arises repeatedly in other sections of this study. The school will act as both a *scuola materna* and a *scuola elementaria* to educate children age 3 – 10 years old, equivalent to grades pre-kindergarten through fifth. Additionally, there is a private nursery school to provide care for children ages 0 – 3 years old. There is already a *scuola materna*, which many of the Torraccia youth age 3 – 6 years old have been attending. There is also a need for middle and high schools in the community as the children of the young families that originally moved into Torraccia grow older. There is a middle school in Castel Monastero and the interaction of the two communities is increased by the populations sharing these facilities with each other. However, there has also been a second wave of populace in recent years as some units were resold and the population pattern is very similar to the first wave: young families with young children.<sup>38</sup> In consideration of this, as well as factors mentioned above about community stability, the elementary school will indeed be well used by the community.

In accordance with the Comune di Roma's *piano di zona*, a recreational facility is being constructed at the northern most end of the community. Covering approximately 10,000 m<sup>2</sup>, the facility will serve a regional function as it is meant to serve San Basilio and other neighboring *quartiere* and is scheduled to open in the spring of 2006.<sup>39</sup> The recreational facility will be maintained by the Comune but a portion of it will also be open for development by private parties who will possibly occupy commercial space surrounding the center's property. The recreational center is supposed to be designed in such a way that it complements the bordering green space and embraces it by connecting Torraccia to the rest of San Basilio via a bike pathway to Parco Arguzano, another green space.<sup>40</sup> The positives of this development are wide spread as well and if it does attract a San Basilio wide clientele the facility could greatly increase the sustainability of Torraccia by increasing economic and social interaction while emphasizing instead of do damage to the green belt around the community.

*Churches.* There are two denominational churches, Evangelical and Catholic, in the neighborhood's boundaries. Posted advertisements at both institutions imply that the churches serve a positive social function in the community. Most Torraccia residents that attend church,

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<sup>38</sup> "Demographic Issues Analysis."

<sup>39</sup> Interview with Maurizio Saiella, president of Associazione Culturale di Torraccia, 13 April 2005.

<sup>40</sup> *Ibid.*

go to service in the community, but there are also many people from outside Torraccia that frequent the catholic church for services and other programs.<sup>41</sup> The church serves a social role in uniting the community within itself and also with outside residents, and thus its presence is a strong sign of sustainability.

*Safety Enforcement.* There are no substations of the *carabinieri*, *guardia di finanzia* or *polizia municipale* located in the boundaries of Torraccia. However, a number of residents expressed that they felt a certain sense of safety in the community due to the number residents that are employed by the law enforcement agencies of Rome. Many of the housing units were built by military cooperatives and so this public service is provided informally. As, these residents move out there may be problems in this aspect of public service however.<sup>42</sup>

*Medical Services.* In case of emergency, first aid services should be available within fifteen to twenty minutes of driving time. Torraccia, with its location on the Raccordo and proximity to the hospital in San Basilio meets this criterion. Within Torraccia, there are no *pronto soccorso* services, but there are several private medical services that meet the needs of residents in addressing routine visit commitments. Although both private and public health needs should be feasibly available within one's own community, it is also necessary to have multiple options. In terms of private medical options, Torraccia is well serviced, and has access to hospitals as well with one located on the Raccordo and one in San Basilio.

In general, the public services provided in Torraccia are now sufficient to satisfy Torraccia's needs and even attract members of surrounding communities into the community. With greater accessibility to these facilities for outsiders their effect on the social and economic sustainability of Torraccia might be even greater. In future developments there should be a greater effort to provide these services from the beginning of the community to encourage social interaction from the start of the community building process.

**Ecological Health.** Sustainability is generally defined as "a state or condition that can be maintained over an indefinite period of time."<sup>43</sup> When discussing the environment the land's carrying capacity, or ability to support forms of life, is contingent on the activity that occurs on its' surface, particularly if the land is being inhabited by humans. The ecological health of

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<sup>41</sup> The majority of the choir is from outside of Torraccia.

<sup>42</sup> "Economic Sustainability: Residential and Commercial."

<sup>43</sup> Columbia University Biosphere 2 (on line). <http://www.eexchange.org/sustainability>. Accessed 17 April 2005.

neighborhood and its surrounding environs is affected by land use, waste handling, and ambient control in the form of light and noise. Maintaining ecological stability is one of the key components to sustainable development and thus when assessing Torraccia's development is important to look at the ecological sustainability of the community after looking at all other aspects.

*Land Use.* In order to maintain a stable residential environment, land must be used in such a way that basic needs are being met, economic activity is sustained and social interaction is promoted, all while preserving the contiguous environment. Torraccia's commercial spine, street-level retail beneath housing units, wide sidewalks and streets all indicate that land use conservation principles were considered in the development of the community. The commercial spine gives pedestrian access to commercial services – to residents and outsiders that park in centralized public parking lots. There are not parking lots in front of every store, but a central parking lot is located on the commercial strip with an adequate carrying capacity. Unfortunately for various reasons the commercial spine is largely vacant and so this goal of increased pedestrian traffic is not met, most Torraccians use their private vehicles, polluting the air.<sup>44</sup> Also the lack of public transit that connects Torraccia to nearby communities increases private vehicle use and ecological problems. This will be alleviated with the extension of metro line B, but other initiatives that will bring in more San Basilians will also bring in more cars.<sup>45</sup> However, the design of Torraccia is better equipped to handle the cars than areas in the center of Rome because the open design of the streets and building and the green belt surrounding the community keep the effects of the pollution from getting caught in between the buildings of the community.

*Waste Handling.* Waste must be handled properly in order to maintain sanitary conditions and neighborhood character; and if combined with reuse and recycling techniques, waste can become a resource. The development of Torraccia improved the ecology of San Basilio in this way by providing sewer and water services to previously unconnected San Basilio areas. This relieved the strain that was being put on that community by illegal housing settlements that had high densities and no waste disposal system. Throughout, Torraccia waste and recycling receptacles can be seen in front of the apartment complexes; clothing donation

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<sup>44</sup> "Economic Sustainability: Residential and Commercial."

<sup>45</sup> The initiatives referred to are the three new roads which the City intends on constructing.

receptacles are often placed near these facilities as well. The streets are commonly without litter or debris. Even in vacant public spaces, residents have chosen not to litter. The reduction of waste or at least the proper handling of it has helped to maintain community character, and maintains the ecology of the development as well.

*Peace and Quiet.* Ambient environment maintenance is as important as the other aspects of environmental control in that it gives residents a sense of pride and security in the neighborhood in which they live. Torraccia does not seem to have any problems with pollution of the aural or visual environment. The tranquility of the development is the most commonly sighted positive of the community by residents. This being said they would also gladly welcome a little more traffic from surrounding areas to improve social and economic networks. This type of noise is not the type that will seriously damage the sustainability of the community; in fact it will help create a more vibrant community.

In ecological terms Torraccia is a sustainable development. It has maintained a green belt around the city and is opens to the sky. The pedestrian friendly design of the commercial strip encourages environmentally sustainable commercial development. The private open space incorporated into the horseshoe shaped residential complexes (available only to residents of that complex) opens up the community and provides ecological sustainability, but in a future development more public green space would be helpful for the social sustainability of the community. These public green spaces would further open up the community and provide a social space and promote social engagement.

### **Recommendation for Future Developments**

According to outlined criteria Torraccia is not currently a sustainable community, however future developments could be sustainable if aspects of the Torraccia model are replicated while implementing connectivity, commercial, participation, social space and public service improvements. The model of the new development on the periphery has positives features and Torraccia has been a success in some aspects of its design goals. It created 2,500 housing units in relief of the city housing shortage, it provided infrastructure to blighted San Basilio areas, and it is a safe community full of residents happy with their neighborhood. However, in terms of long-term social and economic sustainability Torraccia shows signs of becoming a bedroom community isolated from the greater area of San Basilio and lacking

internal social fabric as the residents spend most of their time outside of Torraccia. In using Torraccia as a model for future developments Comune di Roma should replicate some successful aspects. However, there were problems in the design of Torraccia some of which have been addressed since the original development, but these problems could be avoided if in future developments the City considers the following suggestions.

**Replicable Components.** The physical design of the community and the type of people Torraccia attracts should be replicated. Also, there are good amounts of public services in the community; however many of these services were installed retroactively in the last few years by the city in response to the problems that were beginning to rise.

*Physical Layout.* The layout of streets in Torraccia is a sustainable model. The grid pattern with one way streets, sidewalks, and crosswalks makes for a traffic and pedestrian friendly environment within the community. One of the most frequent comments of the residents of the community is that they like the feel of Torraccia. They like that it is safe and open. Both of these factors are partly functions of the wide streets and pedestrian friendly design. There are not problems of congestion that are found in the city center because the divided wide roads allow cars to pass unimpeded through the community. The sidewalks give pedestrians their own space to travel, eliminating the competition for space that is found in the city center as cars and people try to use the same corridor. The sidewalks also make a development more attractive to a young family, a demographic that Torraccia attracted, and promotes sustainability.

The openness of the community is also contributed to by the maintenance of the open space in and around Torraccia. Designing housing complexes that open around courtyards on one or two sides opens up the community even if these courtyards are still gated off and not accessible to the public. In the center where courtyards are enclosed on all four sides, a pedestrian only encounters facades. In Torraccia the open courtyards give a sense of community as a pedestrian looks into another residents housing complex and gives the whole development a more airy feel, more effectively using the green space that is created even if it is actually private. The community is kept clean of garbage and graffiti, giving Torraccia the feel of a haven just outside of the city; a characteristic repeatedly commented upon by Torraccia residents as the reason they moved in and the reason they like the community.

The organization of the commercial space in Torraccia is generally well done and should be replicated. The city did not have the space to create a radial layout of commercial space, so the backbone represents the linear approximation of this model in the space allocated for Torraccia. The radial or backbone model creates strong commercial possibilities making the commercial space accessible by foot to all residents and guiding residents toward the central piazza. For in community shopping Torraccians are able to access stores on foot, and they have expressed their general satisfaction with the layout and accessibility of the commercial strip. The execution of filling these commercial spaces and realizing the potential of this strong design will be discussed below, but the model of the spine or radial design makes sense for future peripheral developments. In sum, the physical design of Torraccia represents for the most part a strong base for sustainability and creates a desirable area from which a sustainable development could evolve.

*Demographics.* The type of people that were attracted to Torraccia represents another positive of the development model and contributes greatly to the positive aspects of sustainability in the community. Attracting young families brings in a safe, strong economic, and stable demographic. The middle income families that moved into Torraccia brought with them two incomes and two or three children on whom they spend their income on. This represents a strong potential for money to flow from outside the community into the community and circulate in Torraccia. Young families will also tend to build a strong social fabric as the children grow up together and interact at school. Many Italians believe that a community only becomes sustainable through building a social fabric, which is dependant on children going to school together and bringing not only their generation together but also their parents'. Moderate turnover of residential units also allows for these children that grew up in Torraccia to move back into the community with their own families. Attracting young families seems to be a strong way to create a sustainable model for a new development.

The other large group of Torraccia residents that moved in because of incentives was military employees that built their housing in cooperatives. The presence of carabinieri, polizie, and other military personnel is largely responsible for the sense of safety in Torraccia. This feeling of safety that is widely expressed by the residents of the community allows children to hang out after school on the street, allows parents to take their children to the playground in the park without fear, and promotes the foot traffic that contributes to the social and environmental

sustainability of the community. The combination of young families and military employees seems to be a model demographic for the development of a sustainable community. This community makeup has allowed Torraccia to become a popular and happy community even placed as it is in a poor area surrounded by previously illegal housing projects and the Raccordo.

*Public Services.* The provision of public services in Torraccia is good, in design, to promote sustainability. However, in Torraccia there was not prompt provision of the public services. The distribution of three banks in the community at even intervals along the commercial strip is good for the development and integrates the public need with the design of the commercial space. Torraccia has a post office that is a large reason professional businesses find Torraccia to be a good location and it also brings in some people from San Basilio into Torraccia facilitating the connection between Torraccia and its greater community. There is a both a catholic church and an evangelical church in the community offering services to the residents and the greater area. In fact many of the people frequenting the Torraccia Catholic Church are from the surrounding area, a sign that the public services are helping Torraccia to weave itself in the social fabric of the San Basilio.

Services that have been developed more slowly in the community and are just opening or about to open are schools and a recreation facility. There is one pre-school open in Torraccia already and an elementary school is opening in September 2005. These schools will be very beneficial for the sustainability of the community. They will cut down on the time the residents of Torraccia spend outside of the community, they will build intercommunity social networks as the children grow up together, and they will build intracommunity social networks as children and their parents from San Basilio come into the community. If the demographics of the community stay relatively stable the presence of the schools will continue to build these social networks and bring in economic activity to the area. The recreational facility, due to open within the next year, will hopefully serve much the same function. It is labeled as a regional facility and should serve all of San Basilio bringing in people from all around the area, creating social and economic networks based in Torraccia.

As evident by the popularity of the community, there are aspects of Torraccia that are sustainable. Some of these aspects should be replicated in future developments of new peripheral communities if the physical design emphasizes openness, allowing for free flows of pedestrian and vehicular traffic, and giving all residents access to commercial services within

walking distance. Incentives for young families and public service cooperatives create a strong demographic that is good for sustainability, and the building of banks, a post office, schools, a church, and a recreation facility all represent the beginnings of a strong model for a sustainable development. However, Torraccia is not sustainable and in future developments changes need to be made in order to avoid some of the problems faced in Torraccia.

**Suggestions.** Torraccia's commercial development is weak, the main piazza is intimidating and the connectivity between the Torraccia and San Basilio is characterized by bottlenecks. These negative aspects of the sustainability of the community represent the challenges for future developments to avoid. By building a more connected neighborhood with more incentives for social and economic success within the community a future peripheral development like Torraccia could add to the character of the city and increase the sustainability of Rome as a whole.

*Piazza Design.* The piazza is located at the center of traditional radial or spinal commercial designs and is supposed to be the focal economic and social center for a community. Torraccia's piazza was designed with this in mind, however in future developments some aspects of the design need to be changed to fully meet these goals and gain the full benefits of the possible sustainability catalyst. In future developments the main focus of the economy and social activity should be placed on the piazza. In Torraccia, the supermarket plays the role as the community's economic center. If the supermarket was located on the piazza the economic center would become the piazza. This would bring the heavy pedestrian traffic headed to the supermarket to the piazza, increasing the opportunities for social interaction in the piazza. In the center of Rome piazzas are full of restaurants and cafes that open onto the public space, uniting the strong commercial sector of food sales and social space. In peripheral development this could be done as well, if some restaurant space was designated for the piazza and the supermarket was placed on the square. The social traffic and economic traffic would support each other.

The physical design of the piazza should be changed in future developments as well. One of the aspects of the development that should be replicated is the openness of Torraccia, but this sense of openness is lost as a pedestrian walks into the Piazza Ambrosini. Piazza Ambrosini is the only space in Torraccia enclosed on all four sides, and some of the largest buildings in the community are responsible for this enclosure. Also, there is a road separating the playground

and social space from the commercial entrances. In future developments a piazza that integrates the social space with the commercial space, without roads running through it, would facilitate the interaction of social and economic networks and make the piazza a more vibrant space. Also, in future developments special attention should be given to the architecture of the piazza to ensure that it is an inviting space that encourages social and commercial interaction.

*Connectivity.* One of the main problems threatening all aspects of the sustainability of Torraccia is its connection to San Basilio. The limited number of entrances into Torraccia and the way that San Basilio traffic is skirted around the community on route to the Raccordo limit the number of San Basilians frequenting Torraccia; decreasing demand for commercial services and contributing to the poor performance of the commercial sector. The residents of Torraccia, as well as ACT and the commercial association all realize the need for better connection with San Basilio. They know that this means a more open community that may negative as well as positive effects, but the residents, while happy with their community, do not want to be secluded. Under the new master plan of the City, transportation will be brought to Torraccia in the form of an extension of the subway line and three more roads leading into the community from San Basilio and surrounding areas. This greater connection will hopefully alleviate the bottleneck traffic jams created by morning commuters, and also create easy access for residents of other communities who might want to come into Torraccia to use the recreational facility, enroll their children in school, or go to church. If these sorts of connectivity implementations were a part of future developments from the beginning, perhaps some of the problems such as low initial investment in commercial space could be avoided because business owners would be more confident in their ability to attract a wider range of clientele.

The expansion of the metro out to the vicinity of Torraccia will vastly improve the efficiency of using public transport to travel to and from the center of Rome. Future developments would be well served by a strong accompanying development of the public transportation system. As it is, Torraccia residents willing to ride the metro into the city still have to drive to Ponte Mammolo to catch the metro, contributing to the traffic problems. Those who ride the 444 have only good things to say about the service, but more Torraccians than not are driving personal vehicles. For future peripheral development Comune di Roma needs to provide roads that connect the community not only to major thoroughfares like the Raccordo, but also to the surrounding communities to be sure that there are social and economic exchanges

between neighboring communities. Problems of bottlenecking could be avoided not only by providing more access roads but also efficient public transportation with incentives for community residents to use the public transport instead of their private vehicles.

*Commercial Vitality.* The least sustainable aspect of Torraccia is its commercial economy. The 75% vacancy rate of the ground floor commercial space that was supposed to be a new regional economic center and the drop in commercial real estate values shows the poor performance of design of the community in this area. What is needed is a different scheme for the marketing of the commercial space in a future peripheral community. There has to be some incentive for developers to come in and build the public housing that is sold at fixed rates, but allowing them to sell the commercial space at their own price has retarded, if not stunted, the growth of Torraccia's commercial economy. There needs to be some way to provide incentives for businesses to move into the area at the same time as the residents. Through this aspect, the problem of lack of supply and demand might be avoided and the commercial economy could become as successful as the residential economy. A vibrant commercial economy would establish greater social interaction in the community.

Incentives for some Torraccia owned business might also improve the economic situation in the community. Torraccians spend much of their day commuting and thus are away from the community during normal business hours. They need stores that are opened later, similar to the grocery store. In any new community that is attracting young families and professionals, most of the residents of the community are going to be employed outside. If there are some locally owned businesses however, these businesses can have more flexible hours because business owners do not have to commute and can better accommodate the needs of the commuting residents. The flows of income into the community from outside sources would be circulated through the community with local ownership. This would be beneficial to the residential economic and social sustainability as the connections fostered in economic relationships might become social relationships. Incentives for timely development of commercial space and development of locally owned commercial space in future developments will help to reduce the likelihood that a Torraccian commercial economic problem will arise. With stronger economic sustainability in a community comes the opportunity for stronger social sustainability.

*Prompt Provision of Public Services.* The public services that are now provided in Torraccia are positive for the sustainability of the community. However, similar to the

commercial development, the timing of the provision of the public services in future developments could be more acute, building strong social sustainability from the beginning of the community. The construction of the school will be good for Torraccia, but its opening ten years after the first residents moved into the community has created a situation where a middle or high school is needed more than an elementary school. In future developments the city should try to provide the public services in a manor that caters to the needs of the community of the future. While the elementary school will bring in San Basilio children, some of its effectiveness as a medium of social connection is lost in its tardy introduction to the community. The same is true of the post office. The introduction of the post office in the last five years has prompted growth in the professional services sector, but if this public service were opened with the rest of the community the professional development might have been stronger from the beginning and some of the vacancy problems in the commercial strip might have been avoided. This is a difficult problem to address, but for the most sustainable developments public services that are introduced at the beginning of the community allow the new development to begin making social and economic networks from the very beginning that strengthens with time.

*Participation.* The residents of Torraccia are pleased with their community. They speak highly of the feel, the design, and the people. Although the residents' are satisfied with the neighborhood it is difficult to see social interaction between the community members. Unfortunately because the members spend so much time outside the community membership in ACT is limited to mostly retired members of the community who are in the community all day and can dedicate more time to the community. Without representation in ACT and without the informal participatory ties that would come from local ownership of business there are few outward signs of social networks. Torraccia needs more participation in the continued development of the community. This will be helped by the opening of the schools where programs will be available for the youth. However, like the stores located in Torraccia, if organizations like ACT were open in the later hours and provided more entertainment services this might help bring the community together and give the association a better idea of what the community actually needs.

Entertainment is one of the most requested new services by residents and if there were more participation and organization, perhaps the residents could have more influence on types new service to be established in the community. In future developments, therefore it is important

to be sure that there are sufficient organizations and opportunities for all members of the community to participate in determining the future of the community, perhaps this means allocating more funds to ACT so that it can have youth and parent focused divisions.

According to outlined criteria, Torraccia is not currently a sustainable community, however future developments could be sustainable if aspects of the Torraccia model are replicated while implementing connectivity, commercial, participation, social space and public service improvements. The residents of Torraccia are pleased with their community, but they also realize it is lacking in some areas. These are the areas that Comune di Roma should consider when creating future Torraccia-like peripheral developments. Inserting a middle income family neighborhood into a poor area has not been a failure by any means. However as Arch. Maurizio Cocciolo pointed out the development is not a community and as the planners at Comune di Roma stated a new social fabric was not created in Torraccia. The residents are pleased but to safeguard against a development's evolution into a bedroom community the Torraccia model needs to be adapted to ensure sustainability of all aspects of the community.

# TECHNICAL APPENDICES

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

N. EASON • T. GORDON • M. HOWELL • R. MACEY • A. NORTON

MAY 2, 2005

FOR COMUNE DI ROMA, MUNICIPIO V

VIA DEI BARBIERI 6 • 00186 ROME, ITALY • 06.686.7070

# RESEARCH DESIGN

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

N. EASON • T. GORDON • M. HOWELL • R. MACEY • A. NORTON

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## **Executive Summary**

Over the next twelve weeks, Ebenezer Sustainability Consulting will thoroughly analyze and evaluate the planned community – Torraccia. The study will begin with outlining core infrastructure components of Torraccia. These components are characterized as transportation, demographics, economics, and policy forces that speak to the functionality and viability of the community. The impacted issues of each component will be thoroughly investigated reliant on statistical data, surveys and empirical observations. Our firm seeks to understand the community of Torraccia in the greater context of the City of Rome through focusing on the issues that most support sustainability. We will make an assessment of the sustainability of the development. The assessments gained will help characterize the current model and provide beneficiary changes in sustainable design plans for the future development of Rome's periphery.

In order to accomplish our objectives, our keys to success over the next twelve weeks will include:

- A detailed survey/interview with residents to retain an increased understanding of the effects of commercial activity in Torraccia
- An analysis of local markets, small business, recreational activities, and special focus on who works/resides within the community
- Through external observations we will provide an understanding of the demographics of the area, we will then classify the neighborhood within an income/age bracket
- Provide an analysis of the community's traffic patterns and provide an understanding of the neighborhood's port of entry and exit

It is impractical to completely assess all of the neighborhood's strengths and weaknesses; therefore we will examine the most pivotal statistics and provide the hard data and evaluations to determine the quality and long-term sustainability of Torraccia. Ebenezer Sustainability Consulting aggressively seeks to pursue these objectives and determine conclusions for future replication or amendments to the Torraccia.

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## Research Problems

### Main Problem

Is the current model of a planned community, as exemplified in Torraccia, a sustainable development?

### Definitions

*Planned Community* refers to any town or neighborhood built with certain guidelines or goals in mind emphasizing economic and social vitality. A good planned community evolves on the basis of local characteristics and design principles that enhance social and cultural integration around a central communal space. In effect, the planned community improves the well-being of the citizens and creates a balanced relationship with the local environment.

*Sustainability* is the social and economic development that meets the needs of the current generation without undermining the future generations' ability to meet their own needs.

*Sustainable Development* delivers basic environmental, social and economic services to all residents of a community without threatening the viability of the natural, built and social systems upon which the delivery of these services depends.

### Questions

The following are questions to help guide the research project:

#### Transportation

- How many cars per household?
- How often do residents use mass transit?
- What bus stops are used most frequently?
- How frequently do the buses come, what times do they start and stop?
- Traffic intensity?
- Does Torraccia's transportation system meet the needs of its constituents?
- What are the weaknesses and strengths of the transportation system?
- How accessible is mass transit?
- Is Torraccia's transportation sustainable? Is it well connected to

#### Demographics

- What is the population density of Torraccia?
- What is the age range of residents?
- What is the ratio of male to female residents?
- What is the ratio of working to nonworking residents?
- How many people are moving in per year?
- How many people are moving out per year?
- What are the ethnic differentiations?
- What is the ratio of residence to outsiders?
- Is there a high or low generation turn over?
- Is there a social and cultural connectedness present?
- Is the community growing or expanding? Is there room for it to grow?

- What type of community is Toraccia?

#### Economy

- What is the current land value in Torraccia?
- What was the land value ten years ago?
- What is the average cost of a residential unit? What are the ranges in cost?
- What is the average household income?
- What is the average hourly wage for workers in Torraccia?
- Where does commercial capital go? To the community or elsewhere?
- What is the commercial make up?
- How many workers in the area actually live in Torraccia?
- Does the neighborhood receive money from the city or the national government?
- How does private investing work with land purchasing?
- Are there any differences between private and public land? What is their relationship?
- Do the commercial services meet the needs of Torraccia?
- Is there a high turn over in commercial? Is there a growth in commercial activity?

#### Policy

- What does the community think Torraccia needs?
- How much money does Municipio V allocate to Torraccia?
- When Torraccia was initially planned, how much money did Municipio V allocate to the project?
- What policies shaped the development of Torraccia?
- What were the city's goals in developing Torraccia? Were these goals achieved?
- Does Torraccia implement any policies of its own?
- Have any zoning changes occurred since the birth of Torraccia?
- How do the changes in zoning laws affect the planning in Torraccia?
- Are there any expansions or infill development plans in progress?

### **Research Objective**

The primary objective is to assess the long-term sustainability of Torraccia di San Basilio as Rome's current model of a planned community which will include, but may not be limited to transportation, demographic, economic and policy issues. Subsequent to demonstrating sustainability, a Case Study will be developed to analyze the findings and to determine conclusions for future replication or amendments to the model.

### **Research Methods**

Torraccia is a mixed-use community with a commercial linear strip surrounded by residential space, which will help aid in addressing the following:

#### Quantitative

##### *Demographics*

Obtain census data

- City of Rome provides census data information at its Statistics Office. We will collect data on demographic issues of age, gender, population, migration, depopulation or repopulation, workers and any other retrievable data.

### *Transportation*

#### Evaluate maps

- Obtain map of public transportation for metropolitan Rome from ATAC, Rome's agency of public transport. Ideally, we may try to find data at the Transportation Department of Rome or ATAC about local registration of vehicles, intensity of traffic and frequency of public transport usage.

### *Economy*

#### Consult realtors about pricing of residential units/commercial space/land value

- Collect realtors' data on pricing for various residential units, and then compute an average cost of different residential units based on income including low income, middle income, and high income.
- Collect data on costs of commercial space and compare costs with location of the space. Is it near the center of the town, on a busy pedestrian area, or in a remote and unpopular area?
- Collect data on land value of entire neighborhood of Torraccia. What are the differences in land value when commercial and residential is built on the land? What is the cost of the land on the borders of the community near the farm land?

### *Policy*

#### Research laws that impact Torraccia

- Contact Municipio V for names and possibly copies of the laws, national and local that impacted the design of Torraccia. In addition, we will ask for the past and current zoning ordinances that may have affected the construction of buildings in Torraccia.

## Qualitative

### *Demographics*

#### Random Sample Survey

- Create surveys with questions about age, gender, ethnicity, residency, migration, income range, and depopulation and repopulation.
- Random sampling will be achieved by asking citizens on the street and other local venues. No bias in choosing the participants but participants may choose not to take the survey which will limit our data.

#### Formal and Informal Interviews

- We will interview liaisons within the community, in particular, the "friends" we have established relationships with throughout our research.
- Random interviews will be conducted with anyone who is willing to speak with us. Our questions will be general about demographic issues.

#### Observations

- Every week we will visit Torraccia at different times and take field notes on our observations. We will note what people are doing, either going to the supermarket, playing with their children in the park or at home, and note the gender, ethnicities, and age. These observations in conjunction with the demographic quantitative data will provide a context from which we will derive justified analyses.

#### *Transportation*

##### Observations of mass transit usage

- At numerous bus stops, we will observe who enters the bus, who exits the bus, in what direction they are headed, where they appear to be going or coming from and the frequency of population usage.

##### Comparisons of transportation usage (mass transit vs. private)

- Observe the amount of vehicles being driven compared to the amount of people on the bus at various locations and times.
- Observe the frequency of vehicles on different streets, which appear to be more popular and which appear to be without vehicles.
- Compare the number of vehicles being driven compared to the number of parked vehicles and commercial vehicles.

#### *Economy*

##### Random Sample Survey

- Create surveys with questions about who works within the community, where residents work within Rome, where commercial capital from the community goes.
- Random sampling will be achieved through asking residents in local venues to participate. No bias in choosing the participants but participants may choose not to take the survey which will limit our data.

##### Formal Interviews

- We will interview liaisons in the community for information regarding capital flow, composition of work force within the community, and where they purchase their own goods.

#### *Policy*

##### Municipio V advising

- We will question Municipio V about history of policies in Torraccia, what has changed, what remains, what the future of Torraccia is, and what connection does the Municipio have with policy making in Torraccia.

### **Timetable**

Over the next two months Ebenezer: Sustainability Consulting will provide subsequent data, through weekly meetings, on the following issues within the time frame stated. Near the middle of our term we will provide a provisional draft on data obtained. Additionally, at the end of this

time period, the team will provide a final report on our analysis of all of the issues regarding the sustainability of the planned community and of the Torraccia model.

Weekly Progress Reports

Transportation Issues	Demographic Issues	Economic Issues	Policy Issues
2/ 21	2/28	3/7	3/14

Draft/ Final Reports

Provisional Draft	Final Report
4/11	5/2

**Budget**

Research Expenses – research expenses encompass services and materials (including reference materials) required to carry out the research.

1. Local Travel - 240 euros
2. Non- capital equipments such as presentation and research supplies - 30 euros

Recipient Contribution – this includes salaries and facilities provided to our team of consultants.

Salary per Consultant – 20.000,00 euros

Total salary contribution – 100.000,00 euros

Total Budget: 100.270,00 euros

**Institution and Personnel**

At Ebenezer Sustainability Consulting we have a wide range of experience in urban and community study, as well as in other technical, legal, and commercial fields.

*Nicole Eason* comes from a small neighborhood along the outskirts of southern Louisiana. Growing up in a low to middle income neighborhood she became an advocate of affordable housing and environmental sustainability. She attended Cornell University to explore solutions to her concerns and is also pursuing an interest in law. She has experience in land trust development, environmental law, mediation and grant writing. She brings to the firm the analysis of theoretical experience and expertise in hands-on community development.

*Tanneasha Gordon* is from New York City. She attended Cornell University to study community development and law. She has experience analyzing the impacts of transportation and other urban concerns on urban social and physical development. At Ebenezer her responsibilities include strategic planning and mobility analysis; pedestrian friendly transportation development, advising of transit operating plans, project environmental assessments, and assessment of project needs given regional transportation goals.

*Meredith Howell* comes from the metropolitan city of Atlanta, Georgia. Having lived in both the central city of Atlanta and in the suburban city of Lithonia, Meredith has seen the interaction of municipalities and counties to accomplish public works projects that benefit the greater metropolitan area. She attended Cornell University to study government procedure and gain a working knowledge of the requirements in implementing development policy. Her areas of expertise include social and public service analysis, macro comparative studies, cooperative planning efforts, environmental land use and green architecture; her broad experience base brings knowledge and structure to the team.

*Rebecca Macey* comes from an established suburban neighborhood north of Chicago, Illinois. Growing up in a wealthy, isolated district outside an architecturally marvelous city, she became an advocate for community participation, multi-functional construction and historical preservation, and enrolled in Cornell University to pursue these passions. She has experience in urban mixed-use revitalization development, mediation, environmental law and world political economics. Her responsibilities at Ebenezer include site analysis, building assessment, zoning regulation evaluation, site mapping, project visioning and community interface.

*Alex Norton* comes from a small town in a rural setting in the mountains of the western United States. He grew up among concerns about the sustainable development of his home town which derived its income from tourism and catering to a second home population. He has worked in various construction fields and attended Cornell University to understand methods for physically and socially feasible sustainable development. He has experience in mediation, and information gathering practices, environmental law, gender and culture issues, and globalization economics. He brings to Ebenezer the analysis of an expert with both technical and theoretical experience in assessing development.

## Nicole Eason

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### Professional Focus

Nicole is the principle in the study of commercial hierarchy. She examines the neighborhood's commercial activities, how they interrelate with the community and how people are associated with and within these businesses. She tries to address what these interactions mean for the sustainability of the community and other aspects of Ebenezer's analysis.

### Relevant Experiences

#### Planning Politics and Policy

- Studied effective methods for facilitation and motivation of community based development corporations.
- Reported on mediation and motivation techniques for handling intense community situations.
- Analyzed and reported on history of community development corporations in local Richmond, VA and Syracuse, NY.

#### Environment

- Analyzed environmental problems, proposed solutions, and participated in community organizations in efforts to formulate alternative route to world sustainability.
- Proposed methods for sustainable development and green planning in San Francisco, CA.

#### Affordable Housing

- Studied various methods for alternative approaches of affordable housing.
- Reported on the impacts of social services and the Department of Housing and Urban Development on public housing and minorities of low-income.

#### Community Development

- Researched and wrote an assessment on the significance of community development and community organizations.
- Studied effects of community development in comparison to low-income and middle-income neighborhoods and proposed methods for further research.

### Education

**Cornell University**, College of Architecture, Art and Planning, Ithaca, NY  
Bachelor of Arts, Urban & Regional Studies

### Other Experience

#### Mays and Valentine LLP, Environmental Attorney

- Worked with local environmental agencies in land mapping, and preservation of green space.
- Founder of committee for the resurrection of environmental preservation camp in Syracuse, NY



## Tanneasha Gordon

104-14 214 Street, NY 11429\* +39 065809891 \* tpg7@cornell.edu

### Professional Focus

Tanneasha is the Director of Transportation of Ebenezer Sustainability Consulting and is responsible for providing planning and analysis expertise to assist the public and private sectors in implementing transportation projects and programs. She serves as the principal transportation director and developer of sustainable transportation work plans.

### Relevant Experiences

#### American Cities

- Study the evolution of urban problems and opportunities facing the majority of the country's population.
- Researched urban development, central city poverty, environmental threats, downtown revitalization, municipal finance, and the new position of women in the urban economy.

#### Global Cities Researching: Singapore

- Conduct studies on people, production, and planning in Third World.
- Develop planning project that assessed its physical and social problems and policy prescriptions for these principal problems.

#### Environmental Conservation

- Assess the environmental implications of transportation activities and projects for all modes.
- Study the impacts of greenhouse gas emission and air pollutants.

#### Promise and Pitfalls of Contemporary Planning

- Work with local officials to develop community-development profiles for several Ithaca neighborhoods.
- Conduct field work on the city of Rochester.

#### Community Development Research

- Study theory, method, and practice of contemporary community development and participatory planning.
- Worked with neighborhood-based community development activist and regional economic development policy-makers for publication.

### Education

Cornell University, College of Architecture, Art and Planning, Ithaca, NY

#### Bachelor of Arts, Urban & Regional Studies

#### Concentration, Law and Society

### Other Experience

#### Legal Intern

- Carried out human resource, and financial projects that assess firm's financial inconsistencies.
- Organized and sorted documents for review.

## Meredith Howell

3146 Pequea Drive Lithonia, GA 30038 \* +39 065809891 \* mlh52@cornell.edu

### Professional Focus

Meredith is the Social and Public Services Director. She critically examines the flows of service and public goods to the community and assesses the effectiveness of commercial centers at meeting the community's needs. Her position as director also includes developing and implementing strategic visions for Ebenezer: Sustainability Consulting that are in alignment with the client's vision, goals, and objectives.

### Relevant Experiences

#### People, Planning and Politics in the City

- Studied effective methods for facilitation and motivation of community based development corporations. Reported on mediation and motivation techniques for handling intense community situations.
- Interviewed former director of Georgia Regional Transit Authority to better understand the connection between agencies at different levels of local government.

#### Environment

- Analyzed environmental problems, proposed solutions, and participated in community organizations in efforts to formulate alternative route to world sustainability.
- Proposed methods for ecological tourism and other profitable enviro-economic ventures in Mexico City, Mexico.

#### Land Use Planning

- Designed hypothetical city of West Sibley with significant contribution to projected economic development of the city.
- Acted as member of consulting group and as planning board commissioner to create growth, economic, land use and social operation legislation.

#### Community Development

- Worked with the town and people of Liberty, New York to assess community satisfaction with current state of affairs and to gather community consensus for future development.
- Conducted field surveys, facilitated community workshops, and presented results to the public.

### Education

**Cornell University**, College of Architecture, Art and Planning, Ithaca, NY  
Bachelor of Arts, Urban & Regional Studies

### Other Experience

#### Environmental Protection Agency

- Assisted section chiefs with research and compiled data for project analysis on Superfund sites in EPA Region 4.
- Archival assistant to Legal and Technical Librarian.

#### Red Rock Global, LLC

- Worked with real estate services and revitalization firm on acquiring data on project sites and site value assessment for clients.
- Contributed to Requests for Proposals (RFPs) for project sites in Florida, Ohio and Georgia.

## Rebecca Macey

96 Woodley Rd., Winnetka, IL 60093 \* +39 066832837 \* ram77@cornell.edu

### Professional Focus

Rebecca is the Director of Design for Ebenezer Sustainability Consulting. She examines the physical design of the neighborhood and how it interrelates with the community. She tries to address what these interactions mean for the sustainability of the community and other aspects of Ebenezer's analysis.

### Relevant Experiences

#### American Cities

- Study the evolution of urban problems and opportunities facing the majority of the country's population.
- Researched urban development, central city poverty, environmental threats, downtown revitalization, municipal finance, and the new position of women in the urban economy.

#### Global Cities Researching: Bangkok, Thailand

- Conduct studies on people, production, and planning in Third World.
- Develop planning project that assessed Bangkok's physical transportation design layout and housing policy issues.

#### Promise and Pitfalls of Contemporary Planning

- Work with local officials to develop community-development profiles for several Ithaca neighborhoods. Conduct field work on Liberty, NY and Woodstock, NY.

#### Planning Politics and Policy

- Studied effective methods for facilitation and motivation of community based development corporations.
- Reported on mediation and motivation techniques for handling intense community situations.
- Analyzed and reported on the adjudication of violated commercial and labor contracts in Washington, D.C.

#### Environment

- Experience analyzing environmental problems, proposing solutions, and submitting these proposals through US governmental structure.
- Professional understanding of major US environmental law.

### Education

**Cornell University**, College of Architecture, Art and Planning, Ithaca, NY  
Bachelor of Science, Urban and Regional Studies

#### Concentration, Law and Society

### Other Experience

#### Denise Macey Design, Interior Design Firm

- Created architectural design layouts for clients' homes and office spaces.
- Itemized seven years worth of inventory, communicated with vendors and clients and collaborated with chief designer, secretaries and other assistants.

## Alex Norton

PO Box 1349, Jackson, Wyoming 83001 \* +39 066864959 \* amn33@cornell.edu

### Professional Focus

Alex is the principle in the study of demographics. He researches how the people interact and tries to address what these interactions mean for the sustainability of the other aspects of Ebenezer's analysis.

### Relevant Experiences

#### Planning Politics and Policy

- Studied methods for effective interaction with communities and communication techniques that facilitate action planning
- Reported on mediation and motivation techniques used in corporate situations that can be used in planning facilitate conversation.

#### Sustainability Assessment

- Researched and reported on the people, physical state and future possibilities for communities in Ithaca, New York.
- Researched demographic, industrial, and physical growth of Mumbai, India and assessed the historical trends while predicting future problems and opportunities for the City.

#### Environment

- Experience analyzing environmental problems, proposing solutions, and submitting these proposals through US governmental structure.
- Professional understanding of major US environmental law.

#### Economic Analysis

- Studied various methods for economic analysis of a regional economy.
- Reported, using input/output analysis, on the possible impacts of various types of development in Wyoming County, New York.

#### Globalization Impacts

- Researched and wrote an assessment on the prevalence, strength, and ultimately a proper definition of globalization trends.
- Studied gender and cultural effects of globalization trends and especially reported on international property rights.

### Education

**Cornell University**, College of Architecture, Art and Planning, Ithaca, NY  
Bachelor of Arts, Urban & Regional Studies

### Other Experience

#### Nelson Engineering, Surveyor

- Worked in the field on construction, land mapping, and property definition surveys.
- Did CAD drawings of surveys, and research of old surveys.

#### Home Construction

- Built residence of Todd Taylor and volunteers with Habitat for Humanity.
- Foreman of a house panting crew.



February 2, 2005

Ebenezer Sustainability Consulting  
Cornell University  
Via dei Barbieri 6  
Roma, Italia 00186

### **Background**

In recent years, the City of Rome has been experiencing a scarcity in housing. In response to this housing shortage, the City developed many residential communities located on the periphery of Rome where land was available. The planning department of the city government created a specific model for a planned community. Torraccia di San Basilio and Casal Monastero are two replications of this model which have lasted more than ten years.

New residential settlements are continuing to sprout throughout Rome. The City would like to further understand the possibilities of sustainable design on the periphery before moving forward with more development plans. However, before we discard or replicate the Torraccia model throughout the periphery of Rome, we are looking for a comprehensive report on the successfulness of Torraccia.

### **Objective of Study**

The primary objective is to assess the long-term sustainability of Torraccia di San Basilio as Rome's current model of a planned community which will include, but may not be limited to transportation, demographic, economic and policy issues. Subsequent to demonstrating sustainability, a Case Study will be developed to analyze the findings and to determine conclusions for future replication or amendments to the model.

### **Scope of Work**

We are seeking a dedicated and well experienced consulting firm that has a strong support staff. This project will require five innovative consultants. The project/ case study should:

- Assess the community's capacity to remain a viable, vibrant contributor to the traditional and changing landscape of Rome. We are especially interested in whether the design of the community fosters social and cultural engagement, and meet the needs of the community.
- Examine the financial and institutional dimensions of Torraccia; and assess the stability of economic flow in the neighborhood.
- Evaluate the scale of mobility and whether the transportation meets the needs of the community.
- Determine if the Torraccia model is appropriate for future developments.

- Determine factors other than the physical design that seem to impact the community's character.

### **Responsibilities and Commitments**

The sustainable development consulting team, comprising of a group of regional planners specializing in civil engineering, community development, land use, transportation, and economic and social policy, will:

1. Provide available historical information (i.e. previous land use design plans, correspondence from Municipio V, etc.) as determined to be pertinent to the success of the respective project
2. Names and contact information of local appropriate contacts
3. Census (2001) statistics, in any available
4. Be available to meet with our management with suitable notices
5. Designate a contact person for communications
6. Provide a minimum of one draft of plans prior to submitting final work
7. Provide weekly progress reports indicating the work completed

### **Submissions Should Include:**

- A brief strategy for addressing the objectives for the project
- Proposed methodology
- Fee schedule identifying the costs and the hourly rate
- A work schedule indicating the consultants' ability to complete the project in the required time. Extensions will only be granted with written approval and may result in a financial penalty.
- Descriptions of qualifications and experience

### **Start and Completion Dates**

The Study period must commence by February 2005 and the Final Case Study should be submitted by May 2, 2005.

Thank you for your interest. We hope to hear from you soon.

Sincerely,

Arch. Daniel Modigliani

We are students from Cornell University in New York, USA studying the quartieri of Roma. If you could please fill this survey out it would help us understand the dynamics of Torraccia in relation to the rest of Rome.

Where do you live and for how long have you lived there?

Where did you live before you moved to Torraccia?

Where do you work?

If you have a spouse where does he/she work?

If you have kids how old are they and where do they go to school?

Where do you and your kids go for entertainment?



# TRANSPORTATION ISSUES ANALYSIS

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

N. EASON • T. GORDON • M. HOWELL • R. MACEY • A. NORTON

FEBRUARY 21, 2005

FOR COMUNE DI ROMA, MUNICIPIO V

VIA DEI BARBIERI 6 • 00186 ROME, ITALY • 06.686.7070

## **Executive Summary: Transportation Issues**

The objective of this report is to assess the effectiveness, efficiency and connectivity of the transportation systems in Torraccia. The design of the neighborhood certainly has an impact on the transportation, and the shapes of certain public spaces have also produced traffic and walkability flow situations that merit investigation. Observations and surveys were conducted to glean the residents' and riders' opinions of the value of the public transportation provided by ATAC Buses 404 and 444. Over time, demographic trends developed, which will be further examined in a report devoted solely to these issues, that produced patterns of travel that are specific to certain groups. The route of Bus 444, the primary travel corridors of the neighborhood, traffic flow and pedestrian travel are the topics of focus for this report. In each section, data from foot observation and other forms of survey have been included for referential purposes.

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**Appendix A**  
Map of 444 Route

## TRANSPORTATION ISSUES ANALYSIS

In assessing Torraccia di San Basilio's sustainability it must be determined whether the residents', as well as the neighborhood businesses', transportation needs are being accommodated. The available transportation must be in accordance with the preserved character of the surrounding environment while increasing and maintaining access to Torraccia presently and in the future. Thus, the patterns of bus ridership, traffic, and the use of parking lots were assessed. People using these services were also consulted to gain information on their impressions of the availability and quality of the current transportation. In short, the aim is to determine if Torraccia is in fact a part of San Basilio and identify the main routes for entry and exit out of Torraccia.

The Bus 444 is the main bus that serves Torraccia. It makes a loop through the neighborhood after passing through San Basilio and stopping at the Ponte Mammolo and Rebibbia metro stops. The bus makes ten stops in Torraccia and is scheduled to run at ten to fifteen minute intervals during peak hours, and fifteen to twenty minute intervals during slow hours.<sup>46</sup> The objective of this study was to examine the trends in bus usage; the general number of commuters frequenting bus 444 and at what hours. Riding surveys were conducted to gain a better understanding of the bus' route through Torraccia; data was gathered at different time intervals throughout the day on different days and the number of people exiting and entering the bus at each stop was recorded.

Torraccia is car friendly, and most of the people interviewed own and use a car as their most common means of transportation. This exemplifies a culture of individuality where all residents commute in their own car. However, is there more to this mobility segregation? The Vice President of Municipio V believes that the design of Torraccia is separatist because it only has one point of access to San Basilio and lacks sustainable ties to the greater community. Torraccia is also located off of the Grande Raccordo Anulare which surrounds all of Rome and provides fast, interregional access to the whole city and the periphery. In order to examine Torraccia's segregation further, a traffic flow pattern analysis was conducted. The number of cars coming into Torraccia from San Basilio and from the Raccordo and also the number leaving through each of these portals were counted.

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<sup>46</sup> ATAC S.p.A, "Linea 444A Partenza de Ponte Mammolo," 2005, <http://atac.roma.it>, 2-21-05.

Traffic flow patterns and parking availability were also examined to assess the accommodations Torraccia has to offer its car cultured inhabitants. The traffic flow patterns observed implicates the quality of the road network and its ability to move residents to their destinations. Traffic flows were classified on a three tiered scale and the time periods when the flows were heaviest were documented. The use of parking in the community was also used to gauge the extent to which the town was designed for, and currently accommodates, car travel. The number of cars in each parking lot was counted and a visual assessment was made of the amount street parking used. Pedestrian traffic flows were also observed to determine the potential of the community for social interaction and to gain a basis for future analysis of the social networks of the community.

The sustainability of this internal transportation network is strong with parking and streets that facilitate efficient car travel, but with sidewalks and crosswalks that promote pedestrian traffic and create the possibility for increased social interaction. However, the connection of the Torraccia to San Basilio and to greater Rome is less sustainable and this lack of strong connection threatens social and commercial sustainability by isolating Torraccia.

#### **Bus 444**

There are two ways to travel to Torraccia using public transportation, Bus 404 or Bus 444. The 404 only has one, tangential stop serving Torraccia on Via Giuseppe Cappi on the eastern periphery of Torraccia (Appendix B). Few, if any, people use the 404 stop on Cappi; the bus usually drives by to serve Torraccia's sister planned community of Casal Monastero on the other side of the Raccordo without even stopping. The 444 loops through ten bus stops within the neighborhood of Torraccia and is the primary public transportation available to commuting residents of Torraccia and visitors to the community and thus the most important to study to understand the transportation sustainability of the community.

The 444 makes 85 trips daily from Ponte Mammolo through San Basilio that loop through Torraccia. The first bus leaves Ponte Mammolo at 6:00 and the last bus leaves Bonifacio at the northwest end of Torraccia at 23:34. From riders' commentary and external observations of bus usage in the neighborhood, the most frequented stops have been assessed; as well as the demography of riders and periods of most frequent use.

The first stop entering into Torraccia on Via Rosario Nicolo and the last stop on the way out of Torraccia, Via Giuseppe Cappelletti are the least frequented. Both stops receive little on and off commuter activity and are often skipped completely by the driver. The exception to this is during peak morning transit hours when Cappelletti is used by commuters headed for San Basilio or toward the metro stations. The second and third stops, located on Via Carlo Arturo Jemolo near the community's cultural center, are where nearly half of the riders coming into Torraccia get off the bus. These stops are mainly used by the youth and elderly. These two stops are appealing because of their proximity to the residential areas as well as their location on the commercial backbone. Non-residents using the 444 to travel into Torraccia to do their grocery shopping get off at the third stop and walk across the street to the grocery store and shopping complex. These two stops offer Torraccia commuters a similar opportunity in that they can run errands on their way home via bus 444.

The fifth bus stop on Via F. P. Bonifacio is the technical end of the 444 route. The bus stops here to wait and get back on its schedule and departs only at its scheduled time. The bus empties and any remaining riders exit at this stop. Very few people get on the bus during the first four stops and there were only five recorded incidents in fifteen hours of observation of riders waiting on the bus at Bonifacio and then riding it out of Torraccia. Mostly women and elderly get on the bus at Bonifacio.

The bus then takes a different route out of Torraccia with five different stops as it moves back to San Basilio. A few people use the stops on Via Enrico Jovane and Via Pasquale Tuozzi and in the morning; these riders were mostly students and young children riding with their parents. The most frequently used stop in Torraccia is the eighth stop, on Via Menichella, where between five and ten riders got on the bus each loop throughout the day usually representing

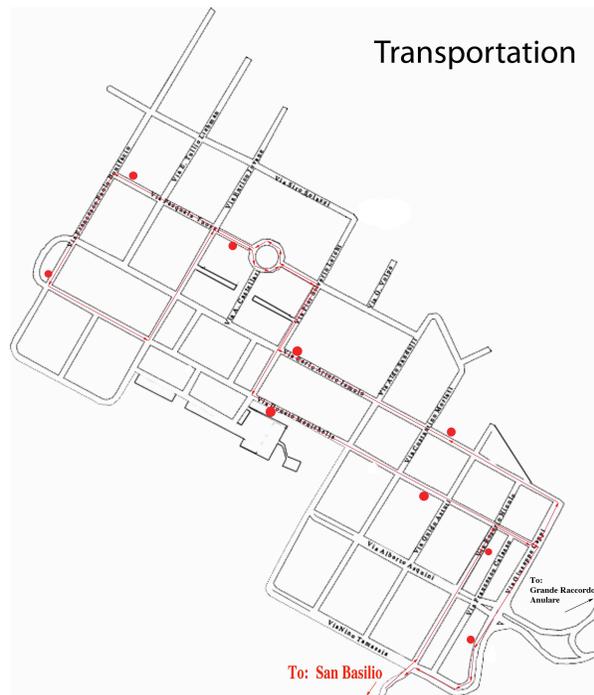


Figure 1: Route of the 444.

about a third of the riders on the bus leaving the community. This is the closest stop to the pedestrian center – the supermercato. Shoppers from other communities use this bus stop to get home, and residents of Torraccia use this stop because of its convenient central location. It also allows them to stop at the supermercato on their way out of Torraccia and it is near the end of the Torraccia loop of the bus route.

The design of the bus route should foster pedestrian travel through the community because people coming into the community to shop get off on one side of the commercial strip and get on at a stop on the other side to the commercial strip. The commercial space of Torraccia is entirely located on the blocks between V. Jemolo and V. Menichella. This is to centralize the service making it pedestrian friendly and encouraging pedestrian interaction. The fact that two of the most frequented stops on the bus line are those on either side of this strip is indicative of a strong interaction between the design of the community and the design of the public transportation that serves it. The bus route is uniquely designed to help in this function and is an example of how the transport within the community is sustainable and supports other aspects of the sustainability of the community.

However, the 444 is not often used for intracommunity travel. It is only used for intracommunity travel during bad weather, mainly by the elderly, and by parents with children. The main purpose of bus 444 is trafficking people in and out of the community. The design of the route is advantageous for the commerce of the community in that it inspires riders coming to Torraccia to move around in the commercial strip. Additionally, the bus route also contributes to the creation of the supermercato as the pedestrian center – because the bus completely avoids the Piazza Gaspare Ambrosini. This is good for the success of the supermarket and the stability of the food sector of the Torraccia economy, but it is not good for the overall social and economic sustainability of the community. Piazza Ambrosini is supposed to be the center of cultural and economic activity in the community as per the Italian, and European, design. However, the design of Piazza Ambrosini does not allow direct access by bus because the roads surrounding it are spanned by residential units that do not have clearance for a bus to pass. This could be detrimental to the piazza's success as a communal public space, and undermine other positives of the bus route design.

In general, bus passengers seem to be female, young, or elderly. This maybe due the presence of a housewife population that uses public transport while their husbands use the

private family vehicle, however in Torraccia 80% of households have dual incomes so in most cases both the man and the woman are out of the community at work every day. The general reliability of the bus was well noted by riders. All seemed pleased with the promptness and frequency of the busses, and commented that delays only occurred when traffic in San Basilio is heavy. Passengers generally made the same comments about the bus service: the bus system is reliable, affordable and gets them to their destination in a reasonable time span.

Peak hours for use of the 444 are related to the schedule of schools. Peak flows out of the community are in the morning between 8:00 and 9:00. Many of these riders are parents riding with their children to school or older children using the bus by themselves to get to school. Peak flows into the community occur in the early afternoon and are composed largely of children returning home from school. Flows out of the community reach as high as 35 people, nearly filling the bus, but on average as the bus leaves the community it has half or less than half of that number of riders. Coming into Torraccia the bus usually has about ten passengers reaching a peak of about twenty during the high traffic hours coming back into the community.

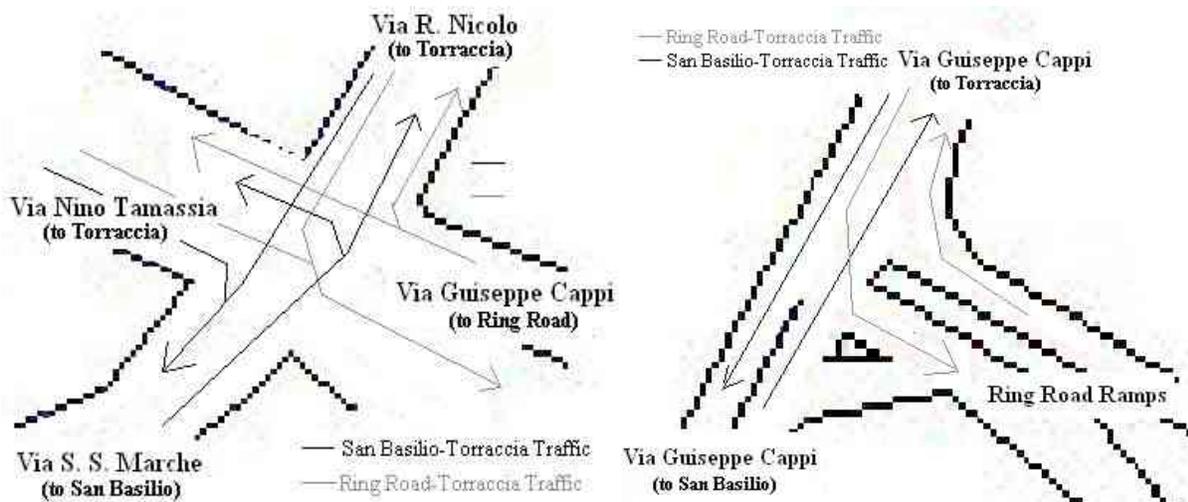
Those who ride the 444 are satisfied with its service, but they are not a high volume of the transportation and many of them cannot drive a car because they are too young or old. If the busses ran more frequently perhaps more people would use the bus but the real problem is that most of the people who live in Torraccia work outside the community in other peripheral areas. Using the bus system to get from one peripheral area to another, while trying to get children to school as well, is not efficient. The public transport from the periphery focuses more on getting people to the center. With the decentralization of government offices and business districts a Rome wide project connecting the peripheral areas is needed to get Torraccia residents out of their cars. The extension of the metro system will help provide more convenient access for Torraccians but will not solve all of the peripheral connectivity problems. Part of this lack of needed bus routes stems from lack of roads connecting Torraccia to the rest of Rome.

## **The Corridors**

Torraccia is an isolated community with one point of access to the Raccordo and one point of access to San Basilio. There is only one bus line that comes into the community making transportation highly dependant upon the personal automobile. The amount of parking available

in Torraccia and the wide internal roads make the residences extremely car oriented. These internal components of the traffic will be examined in more detail below. However, the biggest problem and the aspect of the transit situation that most impacts the sustainability of the community is the connectivity of Torraccia to San Basilio and the rest of Rome.

Torraccia personal vehicle commuters only have two options for leaving the community: the Raccordo or through San Basilio. To analyze the volume at each point of entry a study was conducted at the two portal intersections: the intersection that marks the south end of Via Rosario Nicolo and the ramp interchange for the loop road that empties onto Via Giuseppe Cappi, the road which marks the eastern border of Torraccia.



Both intersections could not be observed simultaneously, thus limiting a truly comprehensive assessment of the traffic flows at the pictured points. At the Nicolo intersection cars coming from Via S. S. Marche in San Basilio, which continued onto Nicolo or Via Nino Tamassia, were considered to be coming into Torraccia. Cars which turned right at the intersection onto Cappi were not counted because their final destination was unknown. However observation showed that approximately 95% of these cars were going to the Raccordo. The same logic was used in considering cars coming from these three roads and entering onto Marche. At the Ring Road interchange cars moving straight through on Cappi were considered to be entering or leaving Torraccia via San Basilio. Vehicles coming from the north on Cappi and then entering the Raccordo ramp system were considered to be using the Raccordo as their transportation corridor; cars exiting the Raccordo and turning right to go north on Cappi were considered Torraccian Raccordo users as well.

Only fifteen percent or less of Torraccia traffic at the Raccordo interchange is interacting with San Basilio. This does not mean there is no traffic along Cappi between the Raccordo and Marche. In fact, there is a constant and heavy traffic flow greater than the flows in and out of Torraccia. This traffic coming off the Raccordo headed to San Basilio can travel past Torraccia without ever having to interact with the community. Via Giuseppe Cappi (on the neighborhood's periphery) guides San Basilio – Raccordo traffic around the south east corner of Torraccia, effectually acting as buffer between Torraccia and the rest of the community. This helps to create the sense of tranquility that is so valued in Torraccia, but it discourages San Basilians from stopping to do there shopping or getting dinner in Torraccia, segregating Torraccia economically and socially. The residents of Torraccia realize this dichotomy and want there to be better road communication between San Basilio and Torraccia in terms of roads and social and economic interaction. A sustainable community requires not only stability within the community but interaction in the urban fabric of the surrounding area. The problem of lack of interaction between Torraccia and San Basilio is thus very threatening to the sustainability of Torraccia and the isolation may lead to the evolution of a bedroom community with no social fabric. However, the problem with the two entry points is not only one of segregating the community and stunting its social and economic sustainability potential. Because the residents of Torraccia commute and have take their children to school in San Basilio and Rebibbia, morning traffic at the Nicolo intersection becomes critically bottlenecked.

Like on the 444, the peak personal vehicle commuter flows occurred between 8:00 and 9:00. The traffic observed during this interval at both intersections was higher than any other observed time. However, the increase was more noticeable, and volatile, at the Nicolo intersection than at the Raccordo interchange. The nature of these flows reinforces the perception that no one that works in Torraccia lives in Torraccia and no one that lives in Torraccia works in Torraccia. It also serves to point out the different characters of the employees and the residents.

In the peak commuter hour 156 cars entered Torraccia from the Raccordo every fifteen minutes and 101 cars exited to the Raccordo every fifteen minutes. This statistic shows the inflow of employees from throughout Rome and shows the commuting nature of the Torraccia residents as well. The hundred cars leaving represent only a third of the number of cars leaving the community while the 150 cars entering the community represent almost 90% of the cars entering the community during these peak hours. This shows the lack of employment of

Torraccia and San Basilio residents in Torraccia as the numbers leaving are almost triple those entering the community showing the exodus of Torraccia residents and the traffic coming off the Raccordo show that the employees of Torraccia come from exterior parts of Rome and not San Basilio. The nature of the commute of the Torraccia residents can also be seen in these traffic patterns.

At the Nicolo intersection, from 8:00 to 9:00, 215 vehicles left Torraccia via San Basilio every fifteen minutes, while only 21 cars entered Torraccia every fifteen minutes through this intersection during this time period. These two thirds of the exiting commuters show the family character of Torraccia as the residents have to take their children to school in San Basilio or Rebibbia. Thus the commuters leaving the community are more likely to use the San Basilio exit of Torraccia than the Raccordo. This puts strain on this intersection in the morning that creates the other major transportation problem for the community besides its segregation.

The 215 cars leaving Torraccia are added to an even larger number of cars coming off the Raccordo headed into San Basilio. The cars coming from the Raccordo are entering the intersection on Cappi which accommodates two lanes of Roman traffic. All of the vehicles, about 500 every fifteen minutes, trying to use Marche to enter San Basilio are squeezed down to one lane. This creates a bottleneck that causes lines of twenty to thirty cars on Nicolo and Tamassia, as well as two lines of fifteen to twenty cars on Cappi. During these peak hours, a large percentage of the cars leaving Torraccia are family vehicles or vehicles taking children to school. The school in Torraccia only accommodates children up to age six or seven. The lack of an open school for older children in Torraccia is probably one of the primary causes of this massive bottleneck for morning commuters – as Torraccia families have no choice but to take their children into San Basilio to school and commute to work from there, where they might use the Raccordo to commute if children could go to school in Torraccia.

Torraccia was designed as an isolated community to be reached primarily by car. In fact, Torraccia was only accessible by car when it was first created – residents had to walk to San Basilio to catch a bus. This design keeps Torraccia separate from San Basilio by having only one entrance and exit into the greater community and by routing San Basilio residents around the community on their way to the Raccordo. The design gives Torraccia the tranquility all of its residents seem to enjoy. However, it impedes and prevents the introduction of needed services into the area; and keeps Torraccia separated from the greater organization of the San Basilio

community to which it belongs. As Torraccia is slow to introduce services such as schools for older children their bottleneck traffic problems will continue and worsen. Additionally, as the design of Torraccia continues to have only one entrance to San Basilio the economic opportunities of the area will be limited. And with the only entrances on the southern end of the community and the center of the community northwest of the geographical center of the community economic and social interaction is further impeded. The new recreation facility that is being built in northern Torraccia is supposed to be a regional facility and provides an possible source of social and economic interaction, but its location and the location of the traffic corridors will undermine this attempt to improve sustainability. Torraccia is well designed to accommodate its residents' needs as far as car use within the community, but the design of the access points does not promote Torraccia's interaction with the greater San Basilio community, and exacerbates Torraccia's other social service pitfalls.

**Internal Traffic Flows**

Torraccia is an entirely planned community. Each street, building and tree was created based on a specific design plan. Thus, the planners had to make choices about how to develop this area for its citizens. In particular, transportation required a design based on access, efficiency, and control of traffic flow. Thus in looking at the sustainability of Torraccia to evaluate the effectiveness of this model of development it is important to look at the internal traffic flows. The connections of Torraccia to the outside world are a threat to the sustainability of the community, but in the community itself the design of the transportation system is sustainable and a positive of the design that might be replicated in future developments.

Time of Day vs. Traffic Flow Level

	6:00-8:00a	8:00-10:00a	10:00a-12:00p	12:00-2:00p	2:00-4:00p	4:00-6:00p	6:00-8:00p
Light			X				X
Medium	X			X	X		
Heavy		X				X	

Light → less than 15 automobiles on street in ten minute time period  
 Medium → less than 30 automobiles on street in ten minute time period  
 Heavy → more than 30 automobiles on street in ten minute time period

The traffic flow in Torraccia appears light and controlled. The one-way streets, corridor entrance and exit, and wide lanes provide automobiles ample space for movement and easy access to all parts of the community. However, in certain areas at certain times a day the traffic intensity increases slightly.

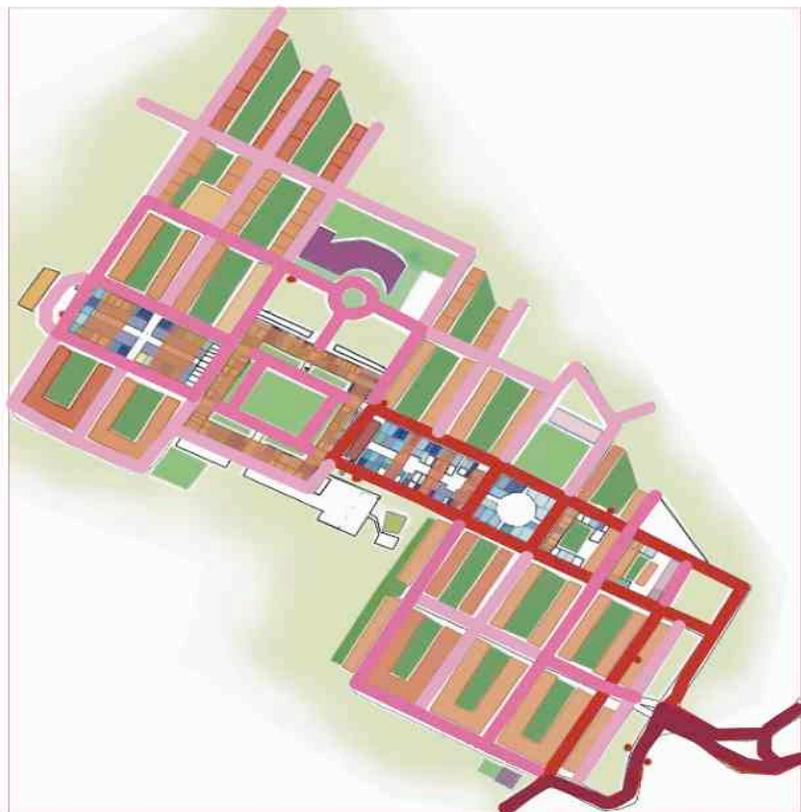
From observations and data collected it appears that the heaviest traffic appears to be during the late afternoon and the early morning. This time would be early morning rush hour, residents leaving to go to work

and workers arriving to Torraccia's commercial sector, and late afternoon after-school rush, parents picking up children from school and going to do some shopping.

This heavy flow is mostly situated around the commercial center and near the entrance and exit to the Raccordo and to San Basilio. Many of the automobiles were going to the parking lot near the supermarket. Medium flow of traffic occurs primarily during afternoon hours. Light flow of traffic occurs in the

Traffic Flow Level in Torraccia

- Heaviest
- Heavy
- Medium
- Low



late evening when most drivers are home with their families or relaxing. Throughout the day, there is light traffic flow in the primary residential areas.

Despite the occasional heavy traffic flow, the flow level in Torraccia appears to be controlled and efficient. The one-way streets contribute to this condition; they surround the central business area and provide automobiles with quick, easy and safe access to the supermarket, bars and clothing stores. Because of the nature of the interaction between San Basilio and the Raccordo, the community does not receive busy through traffic like other

neighborhoods. This limitation of secondary traffic reduces the noise level, vehicle emissions and accidents, but limits interaction with the outside community. The design of the wide roads provides efficient movement through the community for cars and opens the community up to light as well as the space between buildings is greater than in the center of Rome.

## **Parking**

The parking situation in Torraccia is quite interesting. There are eleven parking lots available for public use. Of these eleven lots, only one seems to be used daily. This lot is located adjacent to the supermarket. Observations showed automobiles would enter the lot, the people would exit and go to the supermarket, and they would then load up their cars and drive away, usually towards the ring road or San Basilio. The other parking lots have fewer than five automobiles parked in a space with a capacity for 30. These empty lots appear to be a waste of space but the city may have some regulation that for every square meter of residential or commercial unit there must be x square meters of parking space. Consumers and visitors appear to use these parking lots, whereas the residents of Torraccia have private parking located elsewhere.

From observation, the residents of Torraccia park their automobiles below their apartment complex in underground garages. The garages have automatic access through personal hand-held openers or key-pad access. Families appear to own one or two cars. One citizen, Nico Favia, told us that most families have one small car, which the father uses to travel to work, and one larger car for family trips to Tuscany or other nearby destinations. This second car is parked on the street near the apartment complex.

The design of Torraccia allows for workers to park relatively close to their commercial space. They typically park on the street and no city pass is needed to do so. The streets are about three lanes wide providing two sides of street parking and one throughway for traffic. Most of the workers drive to work but the bus system does bring a few people.

## **Pedestrian Analysis**

The transportation infrastructure and design of Torraccia shape the way pedestrian commute and interact within Torraccia. Bus 444 loops around the central commercial backbone of Torraccia. The bus stops that are located on the commercial strips (Menichella and Jemolo)

are highly frequented by pedestrians because of their location. The pedestrian friendly streets allow parents to enjoy the afternoons with their children, and allow the elderly to take leisurely rides on their bikes around the neighborhood. In addition, the supermarket appears to be the focal point for most pedestrians; especially those who commute from outside to the commercial strip to shop.

Torraccia is designed to be pedestrian friendly. For residents of Torraccia, upon arriving home and parking your car, you should be within walking distance of all your necessities. There are sidewalks on both sides of each street and cross walks at every intersection. The elderly and mothers and fathers with small children are the most commonly observed pedestrians. This pedestrian format should convey a sense of community, but the pedestrians in Torraccia appear to have a distinct destination when walking and rarely stop to talk to each other or acknowledge friends.

During the morning pedestrians are in a particularly “destination” mind frame. Pedestrians are either heading to work or to the bar for cappuccino then work. Due to the prevalence of car commuting, there are few pedestrians traveling to bus stops. Few stores are open during the early morning. The commuter does not have the opportunity to do anything before he or she leaves Torraccia and thus the pedestrians are largely absent from the morning transportation scheme.

During the midday when it gets slightly warmer mothers and a few father with their children are visible on the commercial strip and in Piazza Ambrosini. On nice days there are kids using the playground equipment in the Piazza and the parents sit and watch them. The Piazza is also used to walk dogs. Elderly men can also be seen riding their bikes during the afternoons for leisure. The Piazza is supposed to be the social center of the community and thus one would think it would be the focus of pedestrian traffic flows, however the focus is actually the supermercato outside the Piazza. Females dominate the pedestrian scene, especially on the streets traveling to and from the supermercato. This supports our hypothesis that there is a prevalence of housewives in Torraccia. The grocery shoppers appear to be both residents and non-residents, but enter and leave the supermercato. Additionally, men and women that work in Torraccia are out on their cigarette breaks or on their way to get coffee and lunch at the near by bar. These pedestrians are usually dressed in formal business attire and travel in groups of two or

more. The fact that these Torraccia employees stand out and keep to themselves further supports observations regarding the separation of Torraccia residents from Torraccia employees.

In the late afternoon and evening there is a lot of movement from the supermercato and the parking lot located across the street. Residents are shopping to prepare their dinner and other shoppers from other communities are driving in, parking, shopping and then driving away. As it gets dark, pedestrian movement in Torraccia again fades only to trips out to the car or the occasional trip to the bus stop.

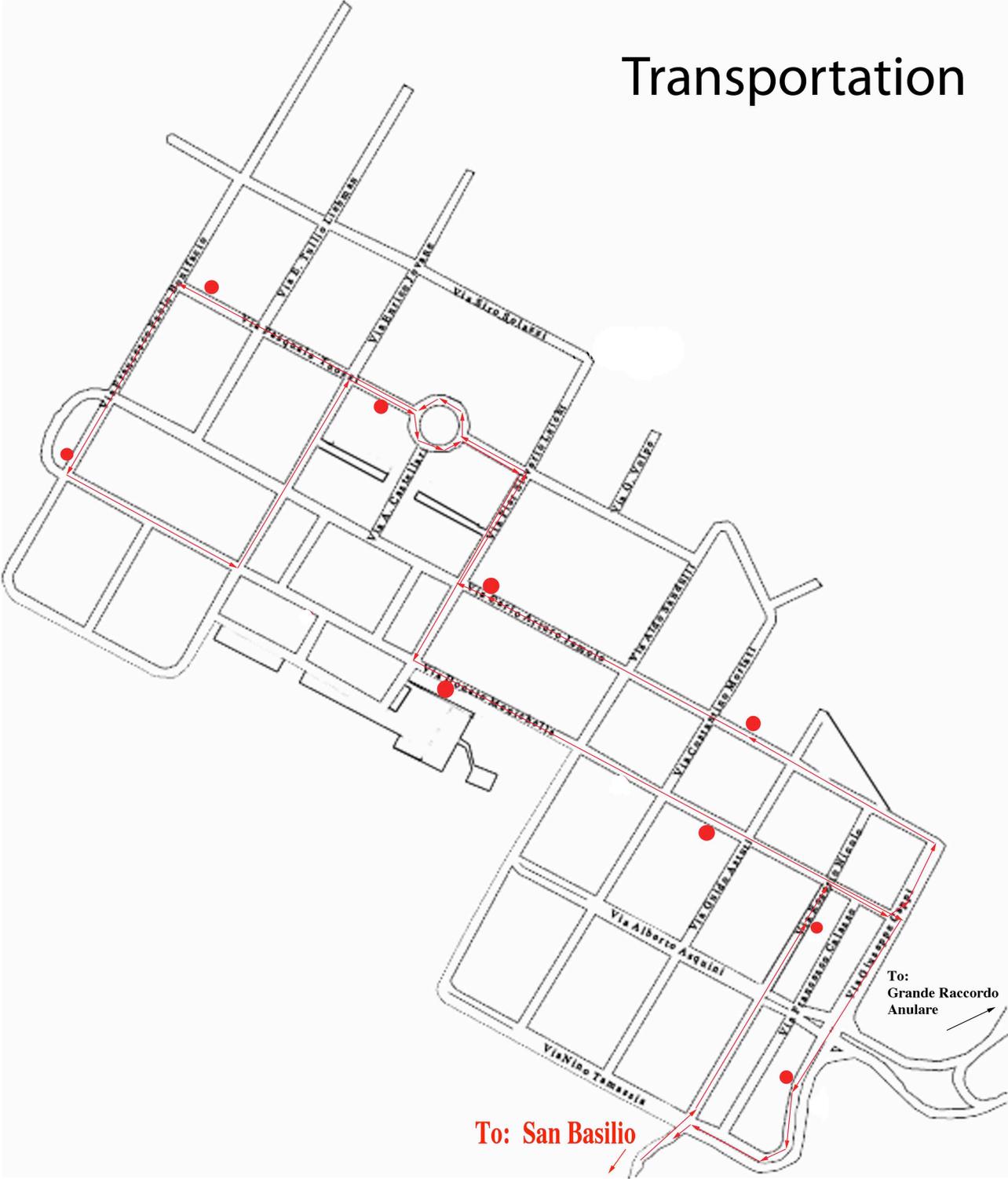
These pedestrian patterns observed in Torraccia are strange when compared to the typical Roman community based around the piazza, but become logical when in the context of the bedroom community. According to the residents of Torraccia the only service they continuously use is the grocery store so this is where the pedestrian traffic is focused. However, the grocery store has become Americanized one stop shop that detracts from the community building shopping tradition of Italian culture. The bedroom community character of Torraccia becomes more evident when examining who the pedestrians are and where and when they commune.

## **Conclusion**

This examination of the four aspects of transportation – bus 444, the corridors, traffic flow/ parking and pedestrians – has addressed (1) the sustainability of Torraccia’s transportation system and (2) whether the transportation design contribute to the sustainability of the community as a whole. In answering the first question, the transportation system does not appear to be sustainable. It does link Torraccia to other communities which inevitably hinder Torraccia ability to become diverse economically and culturally.

As the needs of Torraccia change – its social services remain stagnant; it will face more and more bottleneck and similar problems. The current transportation system will definitely not remain operable into the future. The scale of mobility in Torraccia should be extended where it allows more access to Torraccia from outsider. This would contribute to the overall sustainability of Torraccia by making social, economic, and cultural ties to San Basilio. Torraccia was placed in a foreign environment in a way that it is isolated from the rest of Rome. This placement haunts the sustainability of its current transportation system, which in turn threatens the general sustainability of the entire community of Torraccia.

# Transportation



# DEMOGRAPHIC ISSUES ANALYSIS

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

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FEBRUARY 28, 2005

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## **Executive Summary: Demographic Analysis**

The intention of this report is to evaluate the effectiveness and current trends of the demographics in Torraccia. It will assess the long-term sustainability of the community in terms of age, gender, residential turn-over, and marriage status. Since data is not currently available for Torraccia statistics have been taken from San Basilio census data and other field data, all of which will illustrate the general character of Torraccia as a family-oriented bedroom community. The primary objective of this document is to evaluate the demographic composition of Torraccia and its impact for the future sustainability of the community.

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**Appendix A**  
Survey

## DEMOGRAPHIC ISSUE ANALYSIS

### AN EVALUATION OF SUSTAINABILITY IN TORRACCIA

Demographics are an essential component of every community. They comprise selected characteristics of a population such as age, sex, marital status, family size, education, geographic location and occupation. Demographic data illustrates the general character and structure of a community, and it assists analysts in predicting future trends. In the case of Torraccia, demographic data clarifies our observation-based hypotheses and assumptions. These data are essential in assessing the long-term sustainability of a planned community as exemplified in our analysis of Torraccia di San Basilio. In particular, this demographic issue analysis begins with a breakdown of the human population of Torraccia by age, gender, marital status, family composition, and average household income<sup>47</sup>. In the remainder of our analysis, we synthesize and document the observed trends, analyze statistics, provide data comparisons, and attempt to draw sound conclusions about the sustainability of Torraccia relative to the implications of the demographic data.

#### **Methodology**

Because Torraccia was under construction and had no inhabitants for Italy's 1991 national census and Italy's 2001 national census has not yet been compiled at the tract level, demographic resources of this community are limited. To counteract this problem we are conducting our own survey and data collection in conjunction with the Associazione Culturale di Torraccia (ACT).<sup>48</sup> The ACT has agreed to distribute and collect our survey to about 1,200 residents, and distribution and collection will cease in mid-April.

The survey covers basic demographic information such as household size, income, and age and gender division. Entering the collected data into tables and computing graphs will allow us to compare these data with the data from the previously attained demographic data for San Basilio sector 5E, the community adjacent to Torraccia. These comparisons will support any

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<sup>47</sup> The average house hold income is a broad estimate based on observations, cost of living, and number of family members in a give house hold because of the lack of census data.

<sup>48</sup> An English and Italian copy of the survey is attached as appendix A.

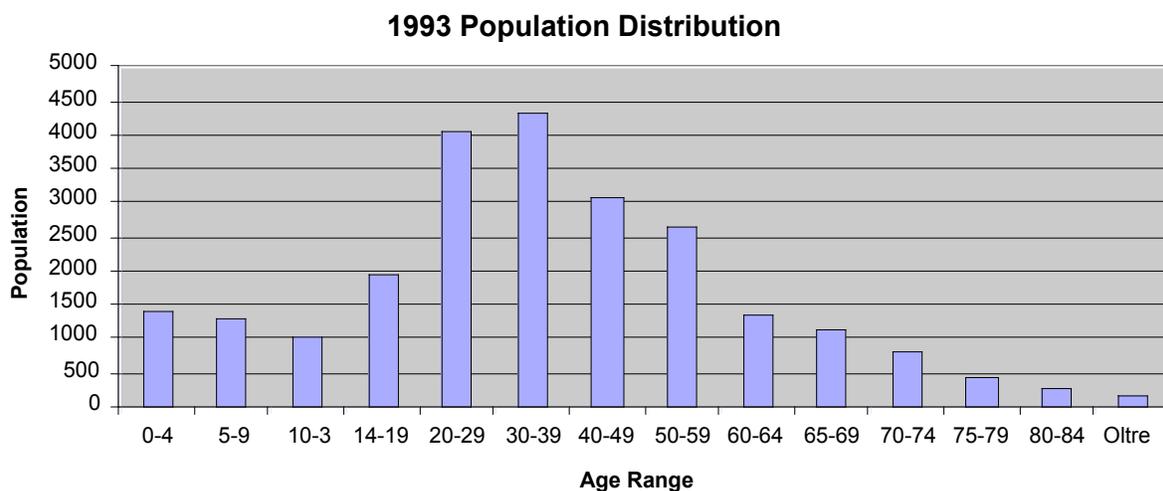
conclusions we formulate about Torraccia and its sustainability as a planned community. The survey also probes where Torraccians work and spend their leisure time. This information will supply us with a sense of what social connections they have in Torraccia as well as in San Basilio and to determine the economic sustainability of the community. The survey inquires where families lived before moving to Torraccia. The location of their primary social bases in Rome will give us another indicator of the social and economic capital flows of the residents of Torraccia. All of these questions, along with questions about how many cars there are per household will also shed more light on the transportation situations we have already identified. The survey is a key component of our analysis of the sustainability of Torraccia because our definition of sustainability focuses on how the design and functionality of the community determines the actions of the people of Torraccia currently and in the future. Thus, demographics are not only a separate consideration but at the heart of our transportation, economic, and policy analysis of the sustainability of the community. The survey will add greatly to our demographic analysis and to our understanding of all areas of the sustainability of Torraccia.

Our concrete knowledge about demographic information in Torraccia comes from our observations and an interview with the President of the ACT: Maurizio Saiella. Torraccia became functional in 1994/1995 when its infrastructure plans were completed. Since then Torraccia has grown to 1,500 housing units. According to Comune di Roma, Torraccia expects no further residential development because the city would like to preserve the green areas surrounding Torraccia. The numbers we gathered from the ACT interview are the estimates of the President and his secretary, but they know the community as well as anyone and therefore the general nature of the numbers can be used to analyze the community.

San Basilio census data also serves as a foundation of our demographic analysis. The San Basilio data is from sector 5E of the entire San Basilio area, this area is the former farming area that later developed into Torraccia. Major changes from the 1993 data to the 2003 data for San Basilio as a whole can be attributed in part to the inclusion of Torraccia into the population census of San Basilio. The 2003 San Basilio data also allows us to compare and contrast Torraccia and San Basilio – the greater community to which Torraccia belongs to – to analyze the sustainability of Torraccia as a member of the greater San Basilio community.

## Age

Age analysis is a way to understand the issues and problems an area faces. Age is the single most important observed variable of demographics and additionally, has correlation with every other variable including, but not limited to, educational attainment, employment patterns, commercial activities, living trends and marital status. Age analysis is also a very important variable to look at when assessing Torraccia's sustainability. It enables us to determine if the population of Torraccia will continue to have adequate turnover and to ensure it is not declining but rather remaining steady.

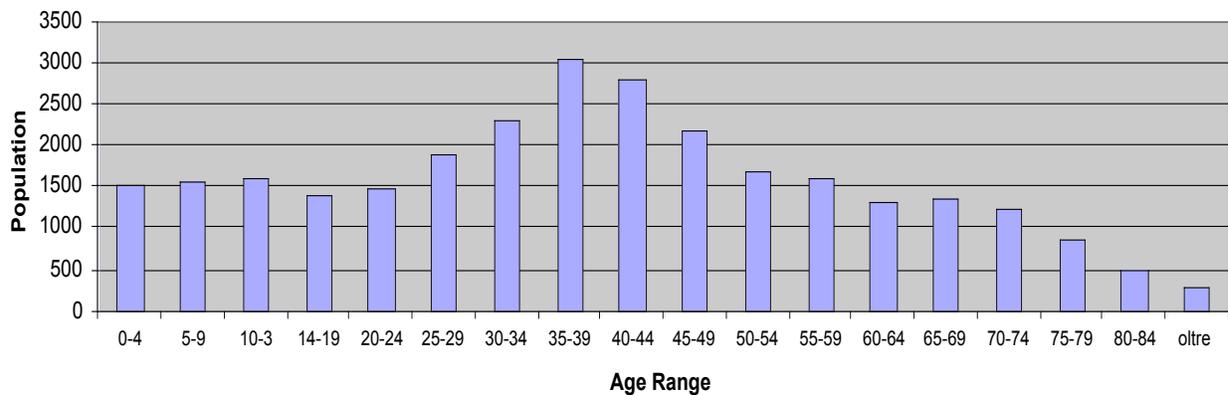


**Municipio V — San Basilio Data.** When collecting statistical information about communities in Rome, Comune di Roma divides itself from the municipality level into large neighborhoods and then further into sectors of neighborhoods. In the case of Torraccia, this community is incorporated into the neighborhood called San Basilio. Since Torraccia had not been constructed until 1994, Comune di Roma never had any demographic information on the community other than as being on the unoccupied farmland on the outskirts of San Basilio. As a result, we had to turn to the census data of the municipality, Municipio V, for demographic information on the Torraccia area. Municipio V classified Torraccia as an incorporation of San Basilio. The availability of data was limited to the sector 5E, the area where Torraccia would be constructed. The following graphs show the age distribution of the population from the 1993 and 2003 census of San Basilio sector 5E, the greater community that Torraccia is within.

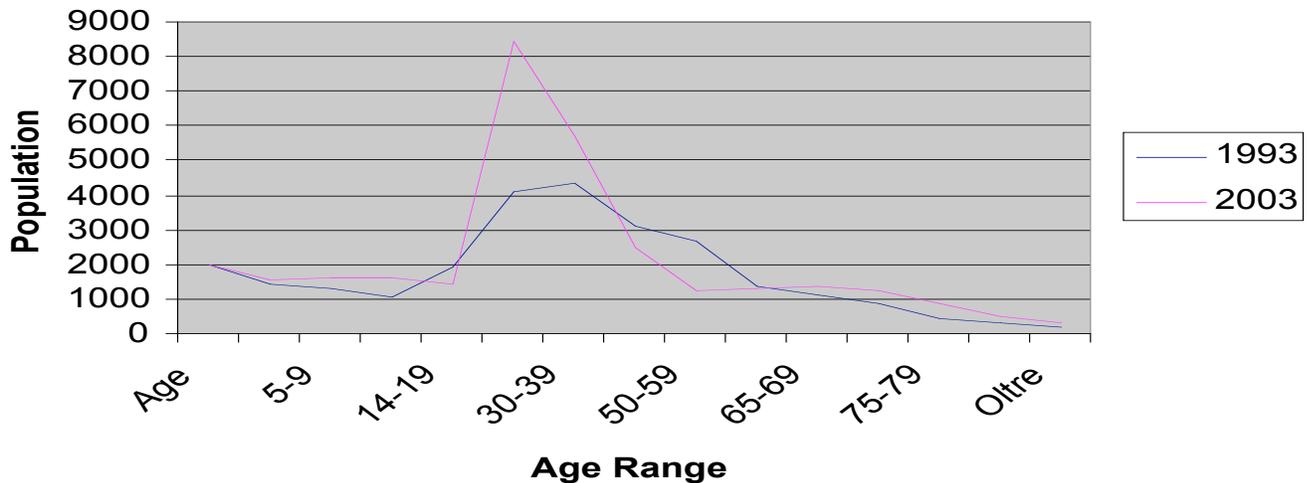
There were 24,141 people in San Basilio in 1993. Nearly 25% of the population was under the age of 20; a quarter of the population was still receiving education. These younger

residents were also more likely to use public transportation and be financially dependant impacting the economy and social atmosphere of the community. Additionally, nearly 15% of the population was over the age of 60, also contributing to the population's utilization of public transportation and unemployment level. The remaining population, nearly 60%, fell between the ages of 20 and 60. These people are more likely to represent married, working parents that demands the most services as their children grow and their incomes peak. Nearly 8,000 of the 1993 San Basilio residents were between the ages of 20 and 40, about 33%, and in the prime

**2003 Population Distribution**



**1993 and 2003 Population Distribution**

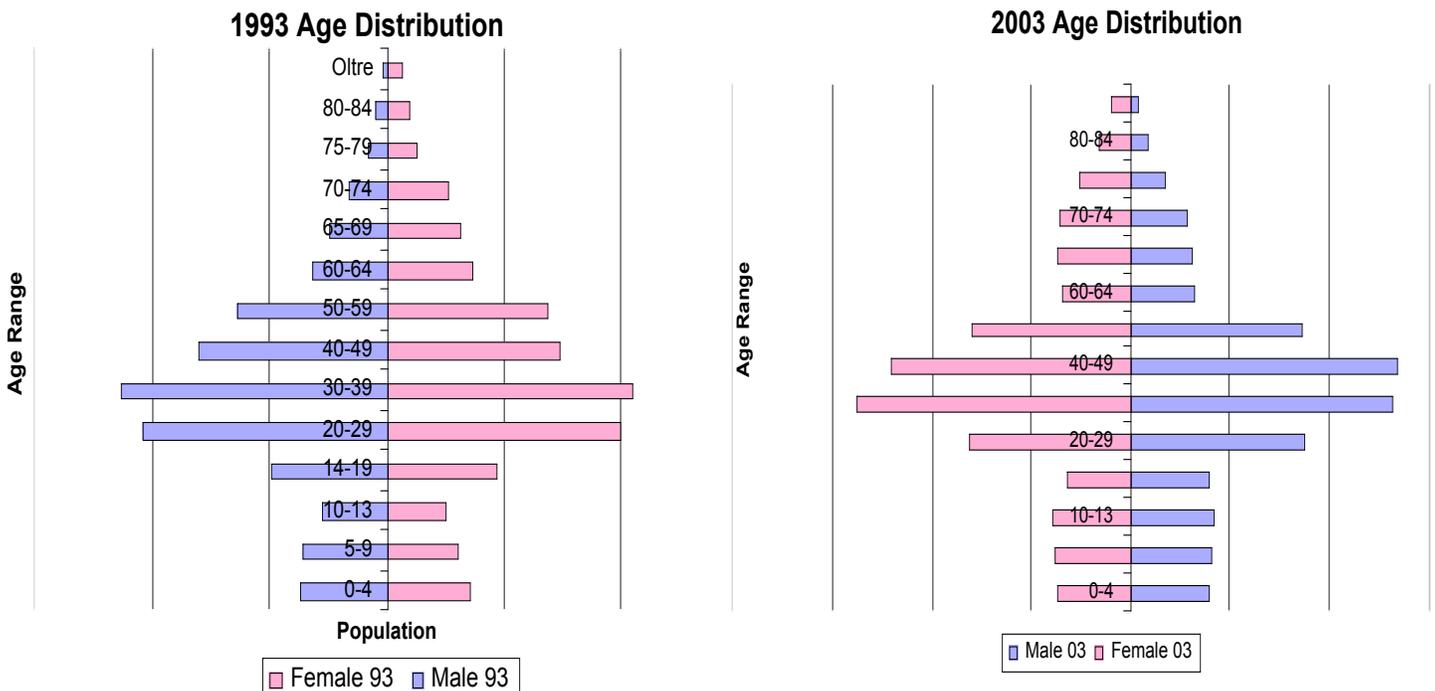


child rearing years. This explains the numbers of children and might predict an even greater jump in the population of young persons in the future. These numbers might also help to explain

why Torraccia was built as they show how many of the residents of San Basilio seemed to be young families.

In 2003 the population of San Basilio sector 5E had grown to 28,834. With the 2003 population distribution, like the 1993 data, the bulk of the population, about 30 %, was between the ages of 20 and 40, the main child-bearing ages. About 25% of the population is under the age of 20 and slightly more than 18% of the population is over the age of 60. Once again, with a quarter of the population being under the age of 20, there is heavy demand for transportation facilities, either public or private, and service-oriented businesses.

In the ten years between the 1993 and 2003 census, the most notable increases in the population were in the number of people in their 30s and 40s living in San Basilio. In 1993, there were just under 4,500 people in their 30s in the community, in 2003 that number had grown to almost 5,500, about a 22% increase. Likewise in the 40-49 age range there were just over 3,000 San Basilians in 1993 compared to 5,000 in 2003, approximately a 33% increase. One



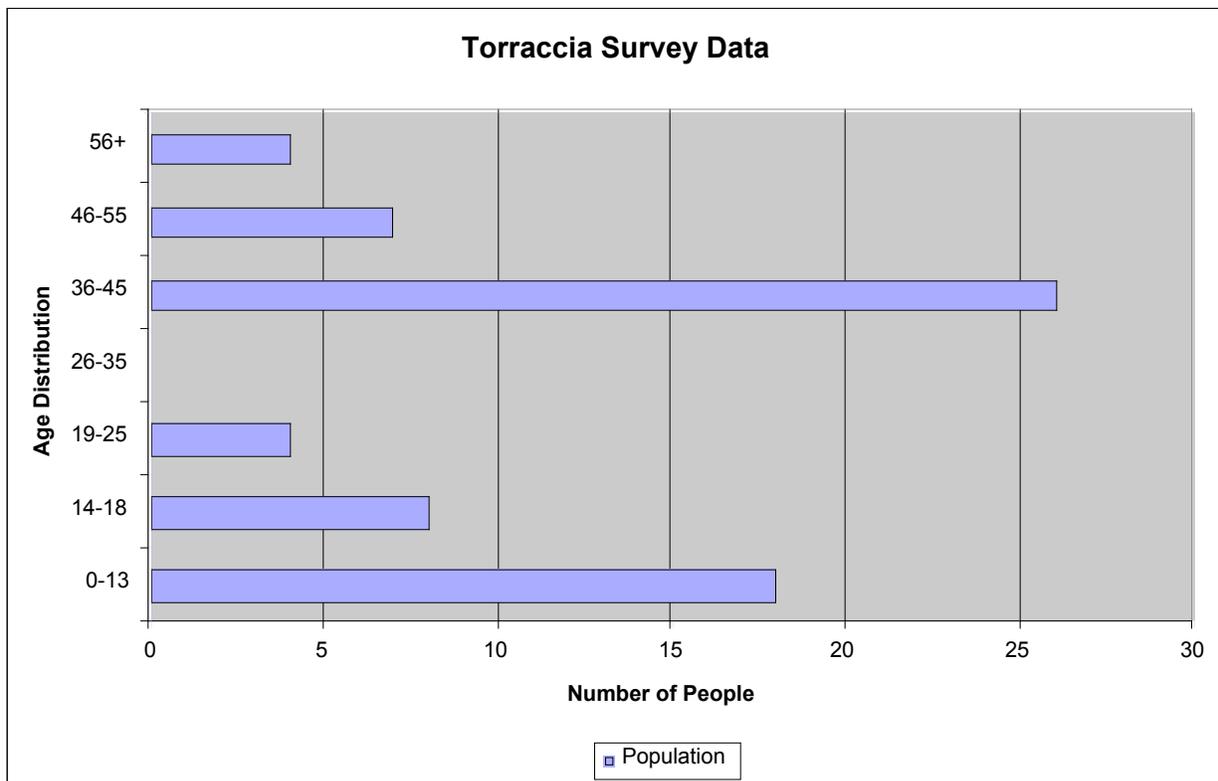
possible explanation for this increase is that the population remained in San Basilio to raise their children and as these residents were in their thirties in 1993, they are now in their forties. The rest of the jump is likely due to the fact that the majority of the people who moved into Torraccia were between the ages of 30 and 50. There were 3,000 0-10 year olds in San Basilio in 1993 and

a very similar number of 11-19 year olds in 2003 which would suggest that a large portion of the middle age people did in fact stay in San Basilio as their kids grew up.

In addition, age patterns in local areas often reflect a life-cycle model. Certain areas or communities attract people in particular life-cycle stages. For example, the populations around universities appear to never grow older and retirement areas never seem to become younger. In the case of Torraccia, it attracts young families.

The age distribution curve of San Basilio maintained its shape but expanded in its width in 2003; this is due to an increase in young children and adults ranging from 30 to 39 years of age – the ideal child bearing age range. There was an approximate 20% increase in population between 1993 and 2003, primarily in children and middle age adults. This data in conjunction with observations and the information from the ACT interview support the idea that Torraccia attracted young middle class families. However, a low resident turnover may reduce the probability of other families coming to live in Torraccia and increase the likelihood of the area becoming a retirement community.

**Torraccia Survey Data.** To counteract the lack of demographic information for Torraccia, we created a survey and distributed it to the residents of Torraccia. Despite efforts



from the ACT and ourselves to ensure completion of about 200 surveys, we only received seventeen surveys. Based on the few surveys collected, we compiled the information into the following charts.

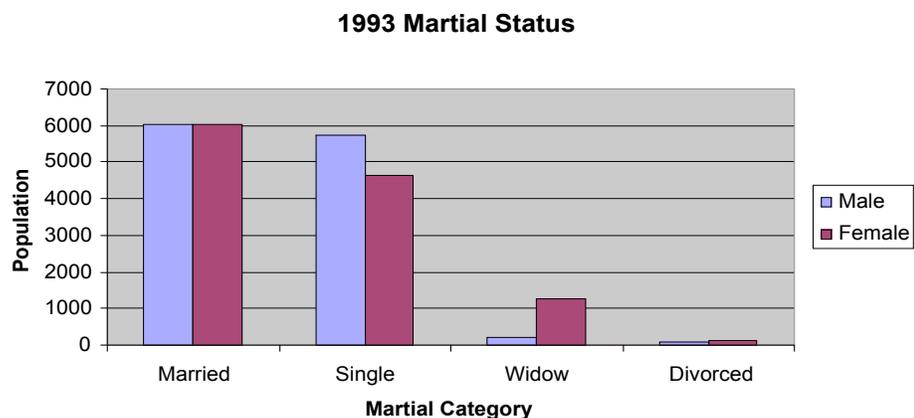
According to the age distribution curve, the most individuals fall within the age range of 0-13 (children) and 36-45 (adults). Children comprise about 27 % of the 67 surveyed people, adolescents (14-18) comprise 18%, family adults (36-55) comprise 49% and older adults comprise 6%. These percentages illustrate a community of young families. In our interview with the president of ACT, Sig. Saiella told us that most of the families shall remain in Torraccia until their children finish high school, similar to the findings of families from the San Basilio data. Sig. Saiella also disclosed that Torraccia has already experienced one generation turnover: the elder families had children who have finished school and the parents have remained in the community. We believe the current young families, with no recognized incentive to move away from Torraccia, will continue to reside in Torraccia like the elder families of the previous generation. This demographic information supports the concept of sustainability: that the needs of the present without compromising the ability of future generation to meet their own needs.

**Martial Status**

The marital status data would indicate that jobs are being created, attracting some to San Basilio. A large number of males who are probably immigrants seemed to move into the area from 1993 to 2003.

We can assume this because the number of married males rose without an analogous rise in wives. This is most likely due to

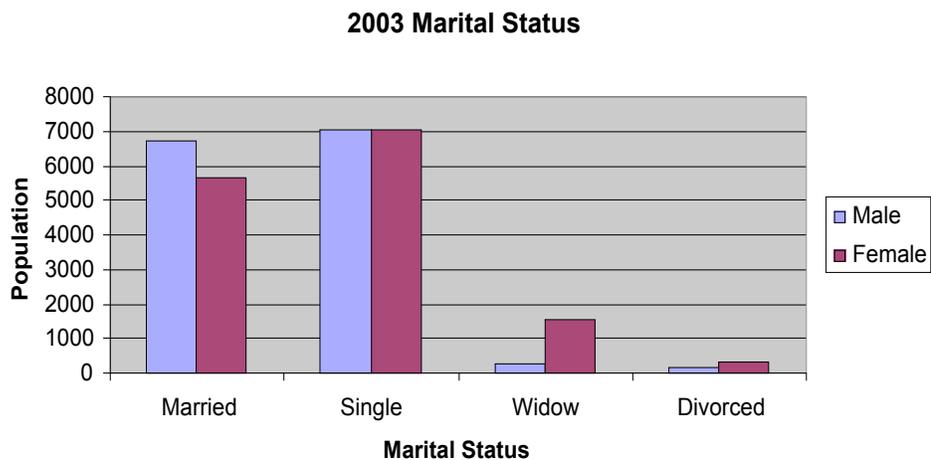
immigrants who move in and then send for their families later. There was also a rise in singles, both men and women, which would indicate the community is attracting the middle age Italians that we know are now less likely to marry. Perhaps economic opportunities and the vibrant



social atmosphere so championed by the Vice President of Municipio V are attracting the singles demographic.

We know that there was an increase of 1,500 people in their thirties even if all of those in their twenties stayed in San Basilio. There was surely turnover in the population and it seems that there was a major influx of single people and married men not living with their families. However, there was also a large number of 0-10 year olds in 2003: 3,000. We know from looking at the 1993 data that a similar amount of young children lived in San Basilio then. The

2003 numbers in the 11-19 year old age group indicate that the young children of 1993 stayed and grew up in San Basilio. From these data, the data that indicates 3,000 new



children were born, the marital status data and what we know about Torraccia we can get a picture of the population movement of San Basilio.

There are about 1,000 married men and 1,000 married women in Torraccia. Therefore for the marital data to stay as consistent as it has for the women, who are the mothers, older married couples must have moved out of San Basilio. We can also see that singles and married males without their families are moving into San Basilio. Thus the demographics are changing and Torraccia's likeness to the greater community seems minimal. Even the families in greater San Basilio seem to be ten years older than those in Torraccia, because we can attribute a large amount of the 3,000 0-10 year olds to Torraccia now being in the census.

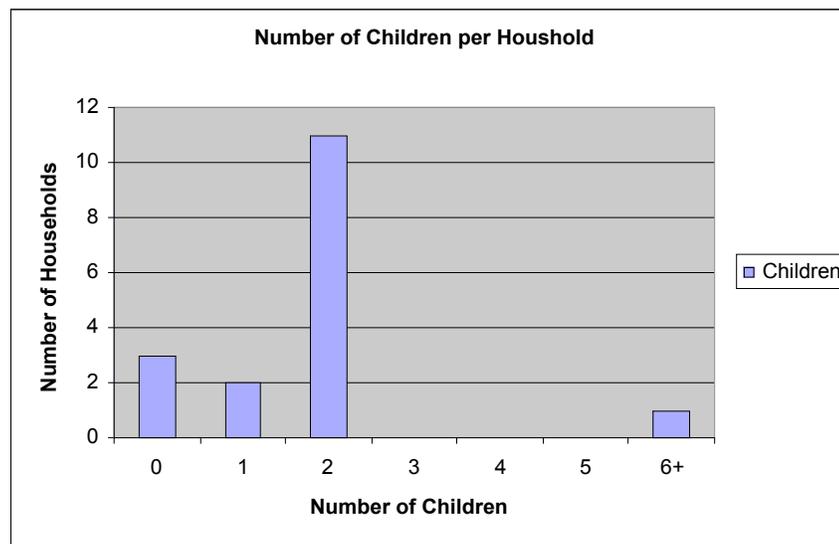
**Family Composition**

Without data from the official census, the only information we have about the current demographics of Torraccia itself are our observations and fieldwork conversations, the few surveys we received and our interview with Sig. Saiella of the Associazione Culturale di

Torraccia (ACT).<sup>49</sup> In general, we have gained the impression that there were many young families in the area. There are many commercial units devoted to children and the only use of the central Piazza Gaspare Ambrosini seems to be parents taking their children to play on the playground equipment. Almost all Torraccia residents and employees mention that it is a bedroom community comprised of young families. We have noticed that (for the most part) anybody who works in Torraccia lives outside of Torraccia and anybody who lives in Torraccia has an occupation outside Torraccia. Our talk with Mr. Saiella shed light on these assumptions and further confirmed them. On the other hand, we got the impression that the community may be more active and connected than we had first thought – as the streets were busy with pedestrian traffic on the Saturday morning when we interviewed Mr. Saiella.

According to Municipio V, Torraccia was supposedly constructed with 2,500 units to satisfy the residential needs of 10,000 people. The planners at the Comune di Roma fully expected four person families to inhabit the community. In fact, only 1,500 out of 2,500 units were built and the

expectation that each house would be occupied by four people was also not met. The Comune’s expectation seems inconsistent and too high with the knowledge of Italy’s low birth rate numbers



and small family size. Yet, the fact that Roma did account for these numbers illustrates their thought process in designing Torraccia as a family community.

Torraccia actually has about nine thousand inhabitants; about half of these inhabitants are children according to Sig. Saiella, so the community is definitely family based. Ten percent of those in Torraccia are elderly and retired, but even the elderly are mostly under the age of 3,600

<sup>49</sup> February 26, 2005.

working adults. If all of the 3,600 adults are married couples, there would be 2.5 children per household in Torraccia.

Of the seventeen households from the survey 12 households had 2 or more children and only 5 had one or less. The ratio for children to household from the Torraccia survey is 1.8 children per household. This number is below the 2.5 estimated ratio of children per household in all of Torraccia. Had we received more surveys, our ratio might be closer to the estimated ratio of children per household. In Torraccia, at least, the children per household ratio suggests that families in Italy are having more children. Greater numbers of children have a direct impact on the development of new planned communities similar to Torraccia. This information suggests that the future policies of Torraccia must consider the great presence of children when establishing new development of the community. Transportation, economic, social and cultural needs will change as the children age and the community must be prepared and recognize the impact of the changes on the identity of the community if Torraccia wants to be sustainable for future generations.

## **Education**

With half of the population under the age of 20, Torraccia can be characterized as a family oriented community. Torraccia provides many commercial and social services, such as a children community theater, toy stores and playgrounds, but it lacks public services targeting the younger generation. In particular, Torraccia has only one school, a private maternal scuola (pre-kindergarten) and no other public education facilities for children. Preliminary surveying showed that most parents must commute with their children to schools throughout the surrounding area. Travel time to these education destinations can take up to 45 minutes during high traffic. We know from conversations and comments of the residents and employees that many of these families moved into Torraccia about ten years ago. If they moved in with one young child and then had one or two more children in two or three year intervals they could now have kids of 12, 9, and 6 years of age, each of which needs to go to a separate school, none of which can be found in Torraccia.

Foreseeing the increase in the number of children in Torraccia, community policy-makers solicited Municipio V and Comune di Roma to build educational facilities closer to the community. The government institutions agreed with their requests and have scheduled a

materna scuolal (for children ranging from 3-6) and an elementary school (for children ranging from 6-10) to open in September 2005.

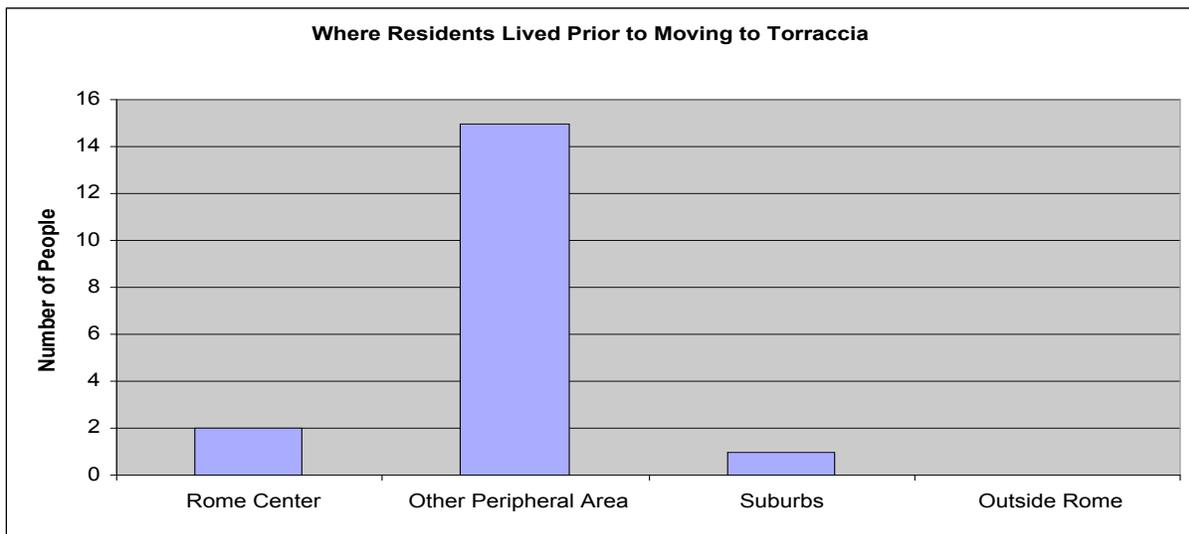
In the mean time, Torraccia's children are filling the San Basilio schools being vacated by the aging San Basilio families. Single and married men without families are filling the housing vacated by older married couples that appear to be moving out of the community. These trends keep San Basilio a functioning community and raise interesting issues as to Torraccia's relationship to its surrounding communities. The schools in San Basilio would need the Torraccian children to maintain their capacity at full especially if there is little increase in the 0-10 age range even with the addition of Torraccia to San Basilio. The solution of building educational facilities in Torraccia might improve the sustainability of this small community at the expense of the sustainability of the larger community. With Torraccia being full and the kids starting to age, which types of schools should the community really be building? The other aspect of Torraccia's character stems from the fact that Torraccia has so many children while it seems as though the rest of San Basilio is taking on a single, working class feel. The needs of Torraccians and those of other San Basilians will not be the same. So how can Torraccia attract the greater community while supporting itself?

### **Geographic Relocation**

One of the questions on our survey asked, "where did you live before moving to Torraccia?" The following graph displays the responses from the residents. Approximately 83% of the residents previously lived in other peripheral areas. This data suggests that the residents are mobile and may imply that residents will move away from Torraccia when their children age. However, in our interview with Sig. Saiella, he suggested that the families moved to Torraccia ten years ago because the city of Rome had a housing shortage in and around the city center and Torraccia provided publicly subsidized housing. He reassured us that most families will remain in Torraccia because they own their home and moving to another locale would mean they would have to rent, attain another mortgage and find another economically feasible location. According to Sig. Saiella, the Torraccians appear to enjoy their quality of life and will stay in Torraccia for years to come.

We attained contradicting information from Nico Favia, a resident of one of the law enforcement cooperatives in Torraccia. Nico said after he finishes his service, he will return to

Bari, Italy with his family and continue life there. He suggested that many families in his cooperative will do the same. This information opposes Sig. Saiella's thoughts and presents a future problem: turnover of tenants. High turnover of residents destroys stable communities and has a detrimental effect on housing, schools, health services, and the building up of local residents' and social groups. But if Torraccia maintains a moderate turnover, it brings in new residents who reuse existing resources and become future supporters of the community. Torraccia does not appear to be at risk of high turnover of tenants and will maintain a stable community.

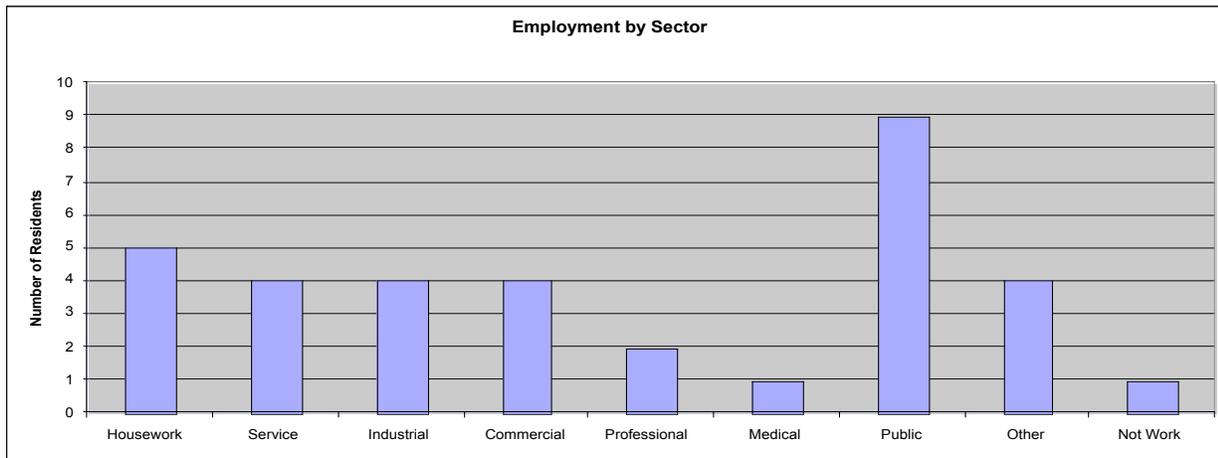
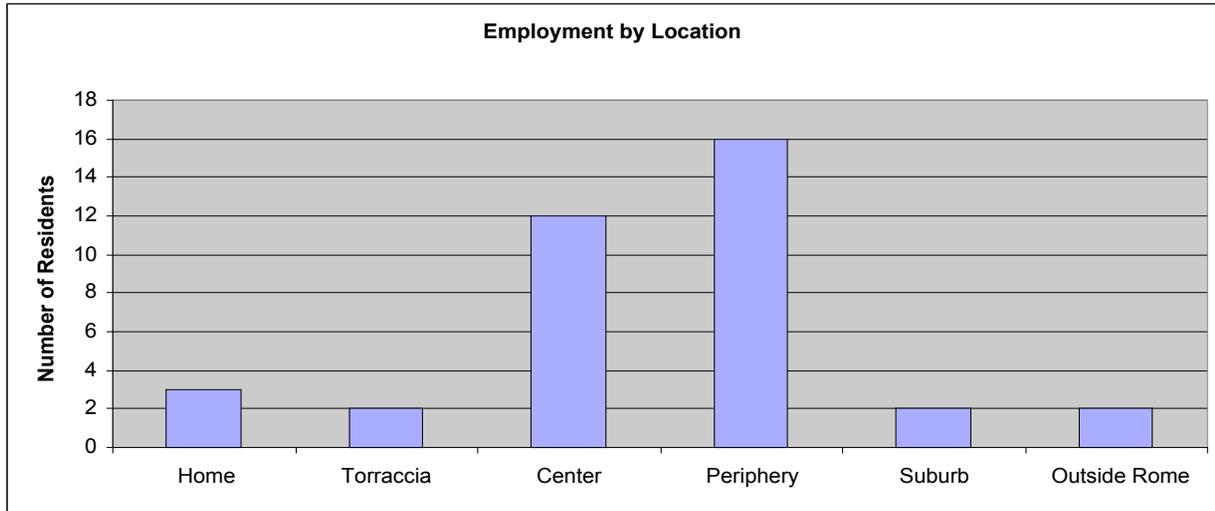


## Occupation

Distinguishing the occupations of the residents became a difficult task because the workers we encountered during our visits did not live in Torraccia. In our meeting with the Maurizio Cociolo of Municipio V, he stressed the low levels of residents who are employed in Torraccia. Data from our survey supports his statement.

In fact, according to our data, only 5 % of residents in Torraccia are actually employed there. The other 95 % work outside of the community with about 32 % employed in Rome center and 43 % employed in other peripheral areas. The data confirms our preliminary observations about residents working outside Torraccia. Torraccians invest their earned money into the community through its commercial units, medical facilities, and food services. The store owners and workers acquire this money and remove it from being reinvested in Torraccia. Capital flowing from one community to another community increases interaction among local

communities, fosters cooperation and attracts viable retail option and activity. Yet, if some capital remained in Torraccia, it would benefit the social equity of the community. And with many residents in service, commercial, professional and medical professions, they could open up new units in Torraccia especially if the inflated commercial market comes down.



In fact, approximately 32% of the residents could open new businesses in Torraccia. Other high percentage of employment for residents is in the law enforcement, about 27%. Both Sig. Saiella and Sig. Favia stressed the importance of residents with these professions because they guard against blight and their dominating presence provides implicit security for the neighborhood. Protection and security allows residents to be more comfortable in their surroundings and participate in daily activities without fear. Adequate public safety is necessary for a stable and functional community. Occupations of Torraccian residents appear to demonstrate characteristics of a sustainable community through their promotion of social engagement and support of adequate public services.

## **Conclusion**

In attempting to understand the community of Torraccia in the greater context of San Basilio through focusing on demographic issues we are able to question and examine the sustainability of Torraccia. Although, we lack concrete statistical information and census data, our observation and resources illustrate the general character and make up of a Torraccia; as a family oriented bedroom community with subtle community connectedness. The demographic data we extracted from analyzing San Basilio show that Torraccia is taking on a different character than its surrounding community. The needs of San Basilio as it turns into a single, working class community are going to be different than those in Torraccia, and the social interaction between young parents whose social scene is largely dependant on their children, and single professionals will be little. Thus it is hard to see Torraccia interacting with the greater community. However, the commercial space in Torraccia could allow for connection as the needs of single San Basilians could be catered to, but only if the connecting transportation corridors become more efficient.

We had assumed there were a lot of housewives and that no one who works in Torraccia lives in Torraccia and no one that lives their works there. In reality the former statement seems to be wrong as there is a strong presence of dual income families, but they are not working in Torraccia. Torraccians work outside the community and their children go to school outside the community. However, the most important aspect in determining the sustainability of Torraccia is the fact that there is little turnover in the residents of the community. Torraccia is full and the residents seem content to grow up in the community. This means that the community will grow old and its needs, focused on the children who make up half the population, will be constantly changing. This creates one of the biggest problems for attracting commercial entities and determining social needs. Thus in making Torraccia sustainable perhaps it will be most important economically and feasibly to look at connecting Torraccia to the greater community; which would also add to the social capital flows from Torraccia to San Basilio.

We are students studying the community of Torraccia. We would appreciate your help in surveying the community. Please circle all answers that apply to each of the following questions and feel free to expand where space is available. Thank you.

How many people live in your household?

- 1
- 2
- 3
- 4
- 5+

How many males live in your household?

- 1
- 2
- 3
- 4
- 5+

How many of each age group do you have?

- 0-14
- 14-18
- 19-25
- 26-35
- 36-45
- 46-55
- 56+

How many cars does your house have?

- 1
- 2
- 3+

How many motorini do you have?

- 1
- 2
- 3+

How often do you use the bus per week?

- 0-5
- 6-10
- 11-15
- 16-20
- 21-25
- 26+

What type of employment do you have?

- Housework \_\_\_\_\_
- Service \_\_\_\_\_
- Industrial \_\_\_\_\_
- Retail \_\_\_\_\_
- Commercial \_\_\_\_\_
- Medical \_\_\_\_\_
- Public \_\_\_\_\_
- Other \_\_\_\_\_

What does your spouse do?

- Housework \_\_\_\_\_
- Service \_\_\_\_\_
- Industrial \_\_\_\_\_
- Retail \_\_\_\_\_
- Commercial \_\_\_\_\_
- Medical \_\_\_\_\_
- Public \_\_\_\_\_
- Other \_\_\_\_\_

Do you own or rent your home?

- Own
- Rent

What is your annual household income?

- 0-10,000
- 11-25,000
- 26-50,000
- 51-75,000
- 76-100,000
- over 100,000

What is your nationality?

- Italian \_\_\_\_\_
- European \_\_\_\_\_
- African \_\_\_\_\_
- Asian \_\_\_\_\_
- American \_\_\_\_\_

What does Torraccia need most?

- Transportation \_\_\_\_\_
- Employment \_\_\_\_\_
- Entertainment \_\_\_\_\_
- Recreation \_\_\_\_\_
- Open Space \_\_\_\_\_
- Other \_\_\_\_\_

Where did you live before Torraccia?

Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do you work?

Home \_\_\_\_\_  
Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where does your spouse work?

Home \_\_\_\_\_  
Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do you shop for food?

Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do you shop for other goods?

Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do you go for entertainment?

Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do you go to church?

Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do you go for medical needs?

Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do you eat dinner?

Home \_\_\_\_\_  
Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Where do your friends live?

Torraccia \_\_\_\_\_  
Roma Center \_\_\_\_\_  
Other Periphery Community \_\_\_\_\_  
Suburban Area \_\_\_\_\_  
Outside Roma \_\_\_\_\_

Why did you move to Torraccia?

\_\_\_\_\_  
\_\_\_\_\_

Would you recommend other move to Torraccia?

\_\_\_\_\_  
\_\_\_\_\_

# **ECONOMIC SUSTAINABILITY: RESIDENTIAL AND COMMERCIAL**

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

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FOR COMUNE DI ROMA, MUNICIPIO V

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## **Executive Summary**

Torraccia is most obviously characterized by the fact that the residents work outside the community and those who work in Torraccia live outside the community. This dichotomy of the residential and commercial sectors is nowhere more evident than in the analysis of the economic sustainability. An economically sustainable community has inter- and extra-community supply and demand and money flowing in, out, and among the community. The residents and the residential economic indicators seem to exhibit strong sustainability, while the commercial economy appears weak. Much of this is due to the fact that where these two classifications interact is underdeveloped.

The residential real estate market is strong, with the price of a medium size flat increasing 150-200% over the ten years of Torraccia's existence. The residents feel safe because of the presence of military public servants living in the community and all residents comment on their love of the community. It is made up of middle income families with two or three children and two incomes. Many of these jobs are lifelong contract public sector jobs and most are outside the community. This is good for bringing money into the community and raises prospects for sustainability.

The problem is that the income is not spent in Torraccia. With the exception of groceries all shopping by Torraccia residents is done outside the community. Also there are few Torraccians owning businesses or working in Torraccia. These negatives of the residential economic situation correspond to the poor economic sustainability. Only about 25% of the designed commercial space is occupied after ten years and commercial property values have fallen 30-40%. This is due to lack of demand stemming from Torraccia residents shopping elsewhere and limited transportation links between Torraccia and San Basilio. Also, this is due to an inflation of the commercial property values as the community was being developed.

The impact of this is that there are many abandoned store fronts inviting crime to enter the community and no money circulating in the community suggesting that Torraccia is becoming, if it is not already, a bedroom community. In future developments, incentives for commercial development and local ownership might stimulate demand by giving residents convenience as they enter the new community which might avoid the lack of demand. Also, local ownership would make for more flexible business that could cater to the community and build social sustainability as well.

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# ECONOMIC SUSTAINABILITY: RESIDENTIAL AND COMMERCIAL

The phenomenon of Torraccia residents working elsewhere while Torraccia employees live elsewhere is a theme that reaches across all aspects of sustainability. This theme is especially representative though of the dichotomy of the economic sustainability of the community. The evolution of the residential economy has taken a nearly opposite course to that of the commercial economy. A sustainable economic development delivers basic economic services to all residents of a community without threatening the viability of the natural, built and social systems upon which the delivery of these services depends, and is sustainable if it provides economic services to present and future generations. It must be characterized by supply and demand from both inside and outside the community to guard against a vulnerable isolated economy and also the creation of a bedroom community. Ascertaining the economic sustainability of Torraccia requires examining (1) the real estate trends for both residential and commercial markets, then (2) the residents and their income, the demand they create, and where they meet this demand, and finally (3) the commercial sectors' performances determining which sectors are most successful and what demand is present in Torraccia. These examinations are based on interviews with community groups, city officials, survey data, and informal conversation with the residents of Torraccia. In general the residential economic situation seems to sustainable with strong income and purchasing power, and its only limits as it relates to the commercial economy within the community which is poor and declining. For Torraccia-like developments to be sustainable they need to focus more attention on creating a strong commercial economy as well as bringing in an economically sustainable group of residence.

## **Real Estate Analysis**

In evaluating the design of Torraccia as an economically sustainable model the evolution of the real estate market gives a background for understanding the aspects of the economic sustainability and provides a base for drawing conclusions about the state

of Torraccia. Torraccia is located just inside the Grande Raccordo Anulare - the large road that runs around the city - to the northeast of the historical center of Rome. The land now occupied by Torraccia was historically agriculture land, having only six residents as recently as the 1991 census. In the early 1990s, Comune di Roma began development of Torraccia on this agricultural land, which it had expropriated, in address to the housing shortages in the city.

**The Placement of Torraccia.** Torraccia was designed to be an expansion of the neighboring community of San Basilio. It is one of the most thoroughly planned communities in Rome, created with the two goals: to create a new urban fabric in the San Basilio area and to provide housing and infrastructure relief for struggling San Basilio. For decades, Rome has searched for a viable residential and commercial development strategy through various administrative methods including the Zoning Law of 1962, which decentralized the governmental and business district; the 1967 Laws which allocated funds for the building of low income housing units and co-ops for Romans; and Piano Edificio Economica Popolar (PEEP), federal money that Rome allocated toward strengthening declining areas in the city. Torraccia is one of the Comune di Roma's latest attempts at solving housing and infrastructure problems.

The PEEP program used to subsidize the building of Torraccia seeks to improve existing communities that were illegally built and lack infrastructure services. PEEP provides funding for new development that would bring sewer, water, electricity and other infrastructure services into these areas. Large areas of San Basilio fell into this category and because building a new development outside of San Basilio required the city to run infrastructure through San Basilio PEEP was used to finance the building of Torraccia. Comune di Roma is pleased with this aspect of Torraccia's development. Many San Basilio buildings that were unconnected and blighting the area now have sewer, water, and electricity and are more viable housing units. Also the city was able to place about 2,500 new middle income housing units in Torraccia to help solve the housing crisis in the city.

The use of PEEP funding means that unlike other communities where there is a clear distinction and separation between public and private entities Torraccia's public and private entities have an interdependent relationship. Under Law 167 the city of Rome

was able to expropriate the undeveloped agricultural land where Torraccia sits because it was to be used for public housing. Comune di Roma then divided the land into lots assigning lots to private developers who were given a PEEP subsidy to build housing. While the developers were free to execute their own plans on each lot – as long as these plans correspond with the strict zoning restrictions of this planned community – the land itself still belongs to Comune di Roma. The city is supposed to be responsible for the construction of all roads in these developments; however the developers build the roads as well for efficiency. The bureaucracy of Comune di Roma is slow and waiting for the city to build the roads could mean that by the time the funds and plans get worked out the laws or administrators have changed such that the development is no longer legal. To avoid this, the developers build the roads and in return the city waives some development permit fees up to the cost of the road. This is how the roads of Torraccia were built.

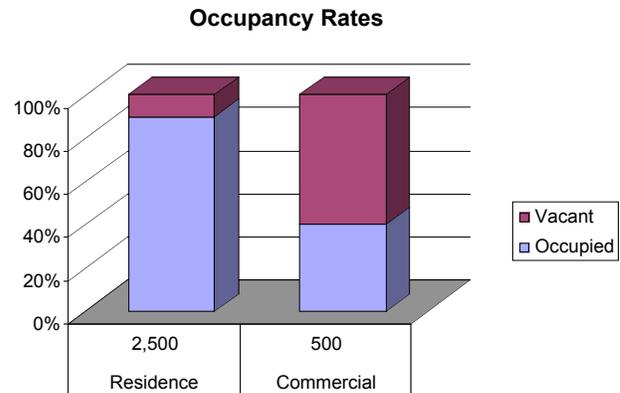
**Residential Real Estate.** The private developers who built the housing then marketed 99 year leases for the units built, and at the end of the 99 years the Comune di Roma has the option to either sell the property or institute a second set of 99 year leases. After the second 99 years all land that was not sold previously becomes property of Comune di Roma for sale or redevelopment as they see fit. To attract developers, the city allowed them to build commercial space under the public funded residential units for sale at market prices. Thus there is a mix in Torraccia of private commercial space under public funded, but now virtually privately owned residential space. The public and private development is further interconnected through the fact that after five years a resident who buys a flat at the subsidized rate dictated by the city can resell that flat at market value. Thus, since Torraccia has been inhabitable for about ten years the residential units represent a private market.

There are three flat sizes in Torraccia: 62, 72, and 92 square meters which have one, two, and three bedrooms respectively. There are about 9,000 inhabitants in the neighborhood - about half of which are youth - housed in about 2,500 residential units in the neighborhood. Most of the homes are owned by their inhabitants; a survey of Torraccia residents shows no renters and Associazione Culturale di Torraccia claims that renting is extremely rare. Because residential units located directly above commercial spaces are less expensive than the typical residential units, many of these units are being

converted into professional office space that does not require street access. This phenomenon will be examined further below, but it contributes to the filling of the housing units that have an occupancy rate of over 90 percent.

Residential property value has risen drastically in the last ten years. According to Municipio V residential real estate prices have tripled over the last ten years. According to Arch. Gaglianone there has only been about a 150% increase. He maintains that the conversion from 1995 lira to 2005 euro is difficult and misleading and that even

though calculations show closer to a 200% increase that the real value is closer to his estimate. In real terms, an average 72 square meter apartment including two bedrooms, a living room, a kitchen, two baths, a garage and a storage unit in Torraccia cost 170,000,000 – 180,000,000 lira at the birth of the community. That same unit is now worth about 350,000 euro. This increase is due in large part to the fact that ten years ago units were being sold at subsidized prices due to their public nature whereas now they are being sold at market value. The increase can also be attributed to the generally good reviews the community gets from its residents and their perception of Torraccia as a safe place to raise children increasing the value of the community as a family area. This popularity of the community is shown in the over 90% occupancy rate of the residential units. If Torraccia can retain these character traits the residential real estate will remain popular and valuable and the residential units full.



**Commercial Real Estate.** There are also about 400 to 500 commercial units in Torraccia comprising about 1/6 of the total real estate in the community. The design of the commercial units of Torraccia is unique to the traditional Italian design. There is piazza designed to be the center of commercial activity, but commercial activity is laid out in a strip between Via Jemolo and Via Menichella rather than radiating out from the piazza. The design was determined by Comune di Roma in this entirely planned community and their departure from the conventional Italian model is puzzling, but can



space. The businesses also have access to all of Rome because of Torraccia's location off of exit 12 of the Raccordo. However, as study of the transportation has shown that access to San Basilio is not always efficient and residents and businessmen in Torraccia all want better access to the surrounding community. Contrary to the promise of prosperity due to its accessible location, Torraccia's commercial center is not strong. Only 180-200 of the about 500 commercial spaces are occupied: only 40 percent. Of these forty percent many are reconverted residential space on the second floor, meaning that the occupancy on the ground level is closer to 25 percent. The struggling commercial real estate market can also be seen in the high turnover rate of businesses. According to Mr. Saiella at the ACT, the average business in Torraccia is only open for six months. Many entrepreneurs will buy a space and open a small store, but high rents and low demand causes the small store to close. The entrepreneurs will then retool and open another small store in the same location because due to the real estate market the entrepreneur cannot sell his space to move. The new store often performs exactly as the first.

As Torraccia was being built with public money, developers with land on the commercial strip were allowed to sell first floor commercial units at market price. This provision attracted developers to Torraccia and represented the economic incentive for the developers to build the public housing. Torraccia's attractive location, adjacent to the Raccordo, provides easy accessibility for all of Rome to enter Torraccia to utilize the commercial activities. Because of this fact and because they were trying to make a profit on their investments, the developers inflated the cost of the commercial space prior to the occupation of Torraccia. Potential store owners questioned opening a store in Torraccia. They were aware of its attractive location but were reluctant to commit without a solid idea of consumer demand in the area. In turn many of the commercial spaces went unsold, and in fact many are still unsold today. This overpricing has caused commercial real estate prices to drop 30 to 40 percent over the last ten years, representing the opposite trend of the residential real estate market. The differences between the residential economy and the commercial economy of Torraccia might be best shown by their differing real estate trends, but the differences are more numerous and will be addressed below along with an analysis of the causes of these differences.

## **Residential Economy**

An assessment of the economic sustainability of Torraccia requires not only a cursory look at the real estate values in the area, but also an understanding of the income and demand of the residents of the community. The use of public funds to build private housing created artificially low housing prices ensuring that Torraccia would fill up by giving original buyers economic incentive to move to Torraccia. The new community was built to attract young families and these families were favored in applications to receive the subsidized housing to avoid speculation. The conditions of the price control require that the flats not be resold for five years after the initial purchase, but in almost all cases these five years has past. Some of the young families capitalized on this by moving in under rent control and then selling their houses at a market price and moving elsewhere. For the most part now, the residences in Torraccia are full and the residents stable. For families that moved to Torraccia in the second generation, rises in property value will probably be more moderate and paying market prices means they have less incentive to speculate. Residents that did not speculate are unlikely to move now that they have been in Torraccia for ten years because Italians in general are less likely to move their families around. Another sign of a more permanent population is that the average mortgage in the community is for a period of 15 years. In the very long-term the 99 year lease structure may have a large effect on the housing market and residential occupancy, but there is possible that in 90 years this structure will be completely different, and the effects on the current development are probably minimal, and do not seem to be scaring people away from Torraccia.

**Income of Residents.** Survey results indicate that the average income of a Torraccia household is in the 26,000 – 50,000 € range. There were households with incomes between 11,000 € and 25,000 € and households with incomes between 51,000 € and 75,000 €, but none poorer or richer than these categories. Survey results also indicate that most of the residents have two cars, two children and two incomes per household, and all respondents own their home. These data, in combination with 350,000 euro housing costs, suggest that Torraccia is a middle to upper-middle income, working community.

The exact population figures for Torraccia are unknown because the 2001 census has not been published yet. According to Arch. Gaglianone, Torraccia has approximately 9,000 residents in about 3,000 housing units with 90% occupancy. Municipio V and ACT estimated 10,000 residents in 2,500 units and 5,000 residents in 1,500 units respectively. We believe that with the most accurate numbers are probably about 9,000 people in 2,500 units, because the municipality and the commercial association would have a stronger interest in exact numbers, and these are the median estimates. Half to 55% of these residents are children and the number of children per household is about 2.25. Most of these households, 80% according to ACT, have two incomes with many Torraccia residents employed in the public service sectors of safety – military, carabinieri, polizia, and finance guards – and education. We know from talking to people on the streets that at least one of the apartment complexes was built by a carabinieri cooperative. These are residents who are a stable demographic, raising their families while serving the city and taking advantage of the housing help as opposed to speculating on their investments. The presence of this population might not represent a high income but they are most likely the reason for the sense of safety in Torraccia. Torraccia is not an upper class neighborhood, but all of the children and parents feel safe and there no need for on duty polizia or carabinieri in the community. This income is not directly economic, but it contributes greatly to the rising residential property value, and suggests sustainability by creating and maintaining desirability.

The 150-200% increase in residential property value is a good indicator of the economic capacity of the residents of Torraccia. Over the course of the past decade, Torraccia has experienced a “second generation” of occupants who paying market values for their homes at more recent prices are middle or upper-middle income families. Because Torraccia attracted mostly young families with dual incomes, the residents already have established employment elsewhere that allows them to afford a house in Torraccia, as well as raising a family. Bringing in incomes from outside the community is good for the sustainability of Torraccia because if all of the residents worked in Torraccia it would be subject to a collapse of the entire economy. However, with jobs outside the community already, two or three kids, and a new mortgage none of the Torraccia residents have the desire to buy commercial space or work in Torraccia, which

threatens to doom Torraccia to become a bedroom community detached from the rest of the city.

**Demand of Residents.** The middle income Torraccia families that draw their incomes from steady jobs which are outside of the community have everyday demands that must be met, but where do Torraccians go for their goods? The income and the need of the families creates the possibility that the money coming from outside the community into Torraccia via the employment of the residents might be reinvested into the shops of Torraccia increasing the sustainability of the community by insuring commercial stability. However, this does not seem to be the case. Because the working residents spend so much of their time out of Torraccia - commuting, transporting children, and working - the money they make is being spent outside of the community as well.

The only demand that Torraccia residents are meeting in Torraccia is that focused in food. All survey respondents stated that they shop for food in Torraccia if not other places as well. This trend was confirmed during our interview with Maurizio Saiella who said that generally Torraccians only spend their money in pizzerias, bars and grocery stores in the community. Beside food, less than a third of residents say they do other types shopping in Torraccia. Most respondents indicated that they shop for all other needs outside of Torraccia, either in other periphery areas or the center of Rome, where they work and send their children to school. Thus, much of the money that these middle income residents make is being distributed in other communities throughout Rome. Because most of the businesses in Torraccia are owned by people who live outside of the community, the money that is spent in Torraccia is escaping as well. The only investment staying in the community is in the form of the real estate investment in the residential property.

Arch. Gaglianone as well as many Torraccia residents described the community as a “quartiere dormitorio”, which literally translated is “commuter suburb.” The main demand of Torraccians is for housing. There were no survey respondents who said that Torraccia needed commercial development. The residents are content to do their non-food shopping outside the community. The most common reply to the question “What does Torraccia need most?” was entertainment; supported by the responses to the question “Where do you go for entertainment?” which mostly indicated the center of

Rome. Torraccians are happy with their middle income, bedroom community. They feel safe, the children say they have places to meet and hang out, and they show no demand for commercial development in the community, only for entertainment development.

### **Commercial Economy**

About 400 to 500 commercial businesses service the 9,000 residents in Torraccia and a great number of the 3 million citizens of Rome. These Torraccia businesses can be divided into two categories: the retail businesses and the professional offices. The retail businesses sell products like clothing, food and household amenities. Professional offices are those of physicians, architects, consultants, and other professionals who provide services.

**Demand.** In both categories commercial business owners are mostly people from outside the neighborhood. In some cases a store in Torraccia may even be a second store of a company creating a mini-chain. The owners are predominately from outside of Torraccia because the people moving into Torraccia already had jobs and were investing their money in housing for their new families, leaving them little capital or interest in investing in a business. Because so many of the people that moved into Torraccia work outside the neighborhood, not only the owners of the commercial development, but also the employees come from outside the community. For instance at Andy Bar the baristi commute an hour each way to work in Torraccia. These workers and owners from outside of Torraccia account for the majority of the demand for retail services in the area. Because the residents are gone for most of the day the only people to demand retail service during working hours are the employees of the commercial businesses. Consequently demand is not very high for retail because we know that there are not that many employees in Torraccia. The daily demand in Torraccia comes mostly from the employees of the professional offices in the area who need to eat lunch and get coffee. There is some commercial activity from San Basilio, but only in a few specialized sectors such as home services.

The Raccordo brings the professional offices their clientele. The professionals cater to a Rome-wide demand that learns of their services by word of mouth, the internet, or phonebook. This clientele comes in for brief visits and then leaves; they do little to

create additional demand, because the services they seek are such that they are only in Torraccia for the time it takes to pick up or drop off their computer for repair, or get their insurance quote. Some of these offices do not even bring people into the community, using the space to house a mostly phone or internet operation.

The shortage of demand for retail services is mostly likely a problem of self-fulfillment. The residents of Torraccia already had jobs and moved from other parts of Rome, presumably areas where they grew up. Therefore they already had established shopping spots and knew places where they could meet their retail demands. Nervous business owners were unwilling to pay for over priced commercial space, which led to a lack of retail businesses as residents moved into Torraccia. With little supply Torraccians reverted to their old suppliers dooming the business owners and starting the cycle of decline that is common to a failing commercial economy. The only sectors that avoided this were food sales, household products, and the professional offices which were not reliant on any sort of Torraccia interaction.

**Successful Sectors.** Some businesses did develop and survive despite the initial inflated commercial real estate prices. Of the two types of commercial space we identified above, only a small portion of the retail stores were successful whereas the professional offices were widely successful. The stores that capitalize the most from convenience: pizzerias, a supermarket, a plumber or pharmacy, survived the expensive costs. The professional offices of physicians, consultants and architects provide specialized services that Romans are willing to drive out of their way to obtain so these businesses survived as well. Convenience is less of a factor in picking an architect or financial consultant than a grocery store, so people from all over Rome are willing to travel to Torraccia for these types of services. The businesses that failed were usually retail boutiques because Romans do not want to drive all the way to Torraccia just to shop at one tie store with all the tie stores closer to their residence, and Torraccians are shopping closer to their places of work or their children's schools as they spend the majority of working hours away from home. As a result, the market price for commercial space has decreased by 30-40% in the past ten years.

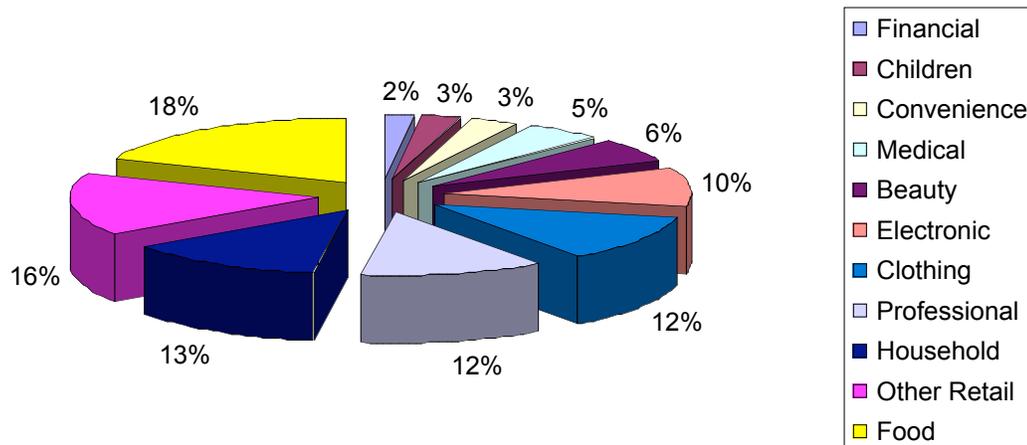
An estimated 40% of the commercial space is occupied by professional offices; however it is difficult to tell because of the number of residential spaces that are

converted into commercial units and uncertainty as to which retail businesses are open and which are closed. Many offices are on the second floor above commercial units because these are the cheapest units available. Units on the second floor are usually cheaper than first floor units because they do not have the prime location of being on the street with easy accessibility to new customers. Although most are located on the second floor of buildings some are also located in commercial complexes hidden behind other retail stores and are only accessible by ringing a doorbell to gain entrance through locked doors or security gates. The offices do not need to be open to the street on the first floor of buildings because they do not need to communicate with the streets, their clients are gained through internet resources or scheduled appointments. The densest area of professional offices is near the post office – which was brought into Torraccia because of the lobbying of the commercial association of Torraccia. The post office along with a clientele that is not Torraccia dependant and no need for street space has allowed the professional businesses to be successful and thrive while the retail businesses mostly fail. If prices of commercial space continue to fall, Torraccia may become a professional business district under a bedroom community.

The break down of Torraccia's commercial activity can be seen the chart below and in the map in the appendix. This chart and map may be slightly misleading because they do not include all second floor office space, and may include stores that are now out of business but still had all their signage posted. However, it still shows the prevalence of professional offices as well as the food industry and the home services industry in terms of retail businesses. Because of the necessary convenience Torraccia residents shop for food in Torraccia and thus related businesses represent the most successful retail sector. The supermarket is successful. Torraccians, San Basilians, and even employees of Torraccia use the grocery store. There are seven bars that are evenly distributed down the commercial spine. These bars serve mostly the employees in the area during their most busy hours are lunch time and the time of the arrival of the employees who need a coffee before starting work. Pizza by the slice pizzerias are also successful. They serve Torraccia employees during the day and children and residents looking for some sort of quick meal after school or work. They are also one of the safe places that children can go to hang out and also represent a social space in this way. There are only two actual

restaurants that serve the 9,000 people of Torraccia. Every one of our survey completers eats dinner at home. These are families that are shopping at the supermarket, cooking for themselves and eating at home, and thus there is little support for restaurants. However, perhaps with aging families and two working parents if more restaurants were opened Torraccians would use them more.

### Public and Private Commercial Services



Besides the food sector, Arch. Gaglianone mentioned that the household services sector is strong. Household electronics, climatization stores and other similar vendors are the third largest category of commercial activity we observed behind only food and miscellaneous - which could include some of these services because part of the miscellaneous category were stores whose function was not translatable. The families in Torraccia as well as all through San Basilio have a need for these services and so this demand has been met in Torraccia. With the introduction of infrastructure to the area, services in this sector became needed. Other San Basilio wide demands are still being met in other places and thus the success of other industries is minimal. The remoteness of Torraccia is very attractive for residents, but is not conducive to attracting a commercial base from around the community.

## **Economic Sustainability?**

There seems to be two situations in Torraccia. The residential economic indicators look strong, while those of the commercial sectors look weak for the most part. The reasons for this can be traced back to the policies that guided Torraccia's development and well as the physical design of the community. So, what can we say about the economic sustainability of the design, and what improvements should be made if a similar model is to be implemented in other parts of Rome?

**Capital Flows.** Capital flow is the path that money takes as residents of a community earn and spend their incomes. An economically sustainable community is neither completely enclosed nor completely dependant on outside sources of income. This protects against internal collapses that lead to spiraling decline in the first case and metamorphosis into a bedroom community in the second case. The middle income residents of Torraccia show a strong flow of money into the community creating potential for a balanced economy that has ties within the community and to the outside. However, Torraccia residents do not own businesses in the community and so any money that is spent in the community is not being circulated around the members but escaping, and because Torraccia residents fill most of their retail demands outside the community the money that they are earning from outside sources is being redistributed outside of the community as well. This capital flow outside of the community with no recirculation indicates that Torraccia might tend to become a bedroom community with no economic fabric of its own. The community will not necessarily disappear or blight, but the lack of any economic sustainability inside of the community will detract from social sustainability because people will spend more time outside the community meeting their economic needs.

Because the only demand Torraccians is for food, the community center has become the supermarket. Pedestrian traffic is concentrated there and the commercial spaces that are further from the supermarket are more frequently closed. It is unfortunate that the supermarket is not on the piazza which would combine the economic and social centers and improve the sustainability of Torraccia greatly; however the design of the piazza itself is not necessarily conducive to commercial activity even though it is supposed to be the pedestrian and economic center of the town. It is less inviting than

any other open space in Torraccia or the other piazzas we find throughout Rome. In the center of Rome, entrance into a focal Piazza brings a sense of openness as the light flows in and space multiplies. In Torraccia the feeling is exactly the opposite. The main roads that flank the Piazza pass under the housing units which are on top of the commercial units. These apartments raise six stories and giving one the impression of entering a box when walking into the Piazza. The irony is that the rest of Torraccia has a more open feel, like one has escaped the congestion of the city and this feel is one of the attractions of the neighborhood. Also, the busses cannot pass under the apartments. This redirects public transit users away from the commercial units on the piazza. This shows the relationship between the design of the economic and social space and the interdependence of economic sustainability with social sustainability.

The design of Torraccia has positives: the middle income families represent a stable demographic with disposable income which they are likely to spend in support of children; the residential real estate market is strong; and there is commercial space available so that much of Torraccia's demand could be met in the community. However, as designed the economic situation of Torraccia is not sustainable. Because of a cycle of over pricing and slow development Torraccians began meeting their needs elsewhere drastically reducing demand for commercial services in Torraccia. This self-fulfilling decline in commercial economy combined with the fact that Torraccia residents do not own businesses in Torraccia means that little money is being reinvested into the community increasing the likelihood that Torraccia will become a bedroom community lacking not only economic sustainability, but also social sustainability. This being the case, what could be done in future models to improve the economic sustainability of developments such as Torraccia?

**Suggestions for Future Developments.** Arch. Gaglianone believes that schools in Torraccia will allow parents and children to spend more time and likely more money in the community, and bring other parents into Torraccia creating economic and social capital flows that would increase sustainability. He also talked about the need for roads to connect Torraccia to San Cleto and Casal Monastero to stimulate commercial relations between the regions. The flows from the Raccordo stimulate the offices, but the residents of greater San Basilio are not using Torraccia as a commercial center. There are

currently some flows between Torraccia and Casal Monastero, but both of these new communities seem to be becoming bedroom communities.

The Comune, under Article 11, a law to encourage revitalization, is planning to build more residential units accompanied by a few commercial spaces in Torraccia. To receive the Article 11 funds this construction will part of a project that will build roads connecting Torraccia to other areas of San Basilio that are struggling economically in a hope that connection will raise their property values. This construction would also benefit Torraccia as there is currently limited access to Torraccia limiting the community's social and economic interaction with San Basilio. There is also a recreational facility currently under construction; being built by Comune di Roma as a regional sport center that is supposed to serve all of San Basilio. The center will have large and small soccer fields, a 25 meter by 14 meter pool, a gym, a restaurant, and a private day care. The center is designed to attract a wide range of ages from all around San Basilio increasing demand for services in Torraccia. These new projects along with the proposed extension of the metro will make Torraccia more accessible and ideally make the commercial center a more viable option for residents from throughout San Basilio. If demand can be supplemented with San Basilio consumers commercial business will open in Torraccia, Torraccia residents will be able to meet their demands at a reasonable price in the community and the economic sustainability of the community will improve.

This suggestions and current improvements in Torraccia represent changes that could be made to the model of Torraccia in future use to make the developments more sustainable. Connectivity is important to supplement Torraccia demand with outside demand. Just like the need for incomes to come from both inside and outside of Torraccia the demand needs to come from inside and outside. Attracting others will also increase the potential for strong social sustainability. Besides these changes that the city and residents have identified in Torraccia future developments might also consider incentives to help residents become business owners and facilitate the commuting residents of the community. Also, in future developments the integration of the design of the social and economic centers could be used to improve the sustainability of each of these aspects of the community.

In terms of incentives perhaps the city could put some restrictions on the prices of the commercial units as well. This would encourage businesses to open in the initial phases of the community. This is important because in Torraccia when there were few businesses residents became accustomed to fulfilling their needs elsewhere and no demand developed. Also, an incentive that encourage not only young families but young entrepreneurs looking for residential and commercial space to move to the development would ensure some long-term recirculation of capital within the community which would increase the social sustainability of the development as well as neighbors interacted with each other while doing business with each other. There needs to be more of this interaction and this might include shops open later than usual to facilitate the commuting population of Torraccia. The grocery store is open late for this reason and is one of the only successful commercial enterprises in the community. If store owners lived in Torraccia and did not have to commute themselves, accommodating this sort of schedule might be easier which would increase the convenience of shopping in Torraccia and thus the demand. The physical design of the community could also be changed to improve the economic and social sustainability. A design that placed the supermarket on a more inviting central piazza would incorporate the social and economic centers of the new community and serve as a solid base for the building of social and economic sustainability.

## **Conclusions**

Torraccia has strong residential economic indicators and weak commercial economic indicators. There are aspects of the design that seem to promote economic sustainability and are encouraging for the future of Torraccia. Some changes that city plans to make will increase the sustainability of the development, and in future developments if these considerations are taken into account as well as incentives for commercial development and ownership and integration of social and economic centers new developments like Torraccia could be economic sustainability.

# **POLICY ISSUES ANALYSIS**

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

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MARCH 14, 2005

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## **Executive Summary: Policy `issues**

Previously, analyses have been conducted on the demographic, transportation and economic status of Torraccia. The information and the data gathered from these examinations have been used in the s document to assist in evaluating the policies and laws contributing to the state of the community in the aforementioned categories in addition to the strengths and weaknesses present in the neighborhood. In addition the analysis will include and evaluation of Law 167 and Piano Edificio Econimico Pupular laws in the development of Torraccia, including the effects it has it has imposed on the current demographic and economic situation of the neighborhood. Also found in this analysis is an evaluation of the “Article 11” program and its corresponding effects on the future growth of Torraccia. Policy recommendations based on observation have been included that are in concordance with the policies already being implemented by the Comune di Roma and Municipio V. The primary objective of the document is to begin critically evaluating the firm’s hypothesis on the sustainability of Torraccia.

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### Appendix A

New Policy Development Map

# POLICY ISSUES ANALYSIS

## **Introduction**

Torraccia di San Basilio is a neighborhood still in its developmental stages; however, it is also a neighborhood that is already in need of improvement. Previously, analyses have been conducted of the demographic, transportation, and economic status of Torraccia. The information and data gathered from these examinations will be used in this document to assist in evaluating the policies and laws contributing to the state of the community in the aforementioned categories in addition to the strengths and weaknesses present in the neighborhood. Policy recommendations based on observation will be included in concordance with the policies already being implemented by the Comune di Roma and Municipio V.

## **Initial Policies**

Law 167 is an Italian national law from 1962 that allows for the expropriation of land by a city to be used as public housing. The act of eminent domain became available to Italian planners and developers and is still used today under the framework of Law 167. This is the principal law that established the Piano Edificio Economico Popolare (PEEP) laws and other public improvement laws that pertain to Rome and especially to the development of Torraccia. The use of Law 167 in conjunction with the second PEEP laws allowed the Comune di Roma to expropriate the farm land, now Torraccia, to build the housing they needed.

Torraccia was built as a response to Rome's housing shortage. In 1991 when the plan for the creation of Torraccia was developed, Rome decided that additional development, instead of re-qualification, was the proper strategy for providing the housing the city needed. Instead of giving a zoning variance to a private developer, Rome wanted to build a planned community that would be more regulated in its design. To do so Rome needed the undeveloped land located on the periphery, which meant expropriating land. Law 167 can only be employed if the land being expropriated is used for the construction of public housing. Rome then needed money to build the public housing and turned to the second PEEP program. PEEP II is a national program that gives money to regions to allocate to housing projects. In Lazio, PEEP II money is allocated to



Developers were allowed to sell this commercial space at market value. Although funding for the construction of these buildings was coming from PEEP funding, the developers had to sell the housing units at a controlled lower price. The free, market commercial space was a means of deriving profit for the developers and is likely what attracted them to Torraccia. By using a combination of the PEEP laws, Law 167, and strategic stipulations on the allocation of the PEEP funding, Rome was able to build the community of Torraccia on the periphery of the city.

The space between San Basilio and the Ring Road required that Torraccia be designed in a wedge shape, which is contrary to the typical Italian design of the radial-community surrounding a commercial center; this design was abandoned in favor of a commercial backbone that runs the length of the community. The execution of this design is one of the main factors affecting the social and economic functionality of the community. The commercial spine is between Via C. A. Jemolo and Via D. Menichella. On this spine is Piazza Gaspare Ambrosini which is still supposed to be the cultural and economic center of the community even though the radial pattern is lost. The problem of the design has largely to do with the division of the social functions of the community from the economic. The idea of the spine is to make it easily accessible to all residents by placing commercial space no more than a block away from the majority of the residential spaces, but this deters people from gravitating toward the center of town: the piazza.

As it is, for reasons examined in more detail below, the only real demand in Torraccia is for food; hence the community's economic center becomes the supermarket. The supermarket is off of Piazza G. Ambrosini, thus separating the social and economic centers of the town. Also contributing to this split is the design of the piazza space; Torraccia's design is open and free compared to the congestion of the city center, everywhere except the piazza. Piazza Ambrosini was designed with five stories of housing above the commercial space; this housing spans the roads that surround the piazza, creating cave-like entrances to the space. This box-like construction around the piazza makes it less inviting and discourages recreation in the central area, despite the fact that there is a recreational park and outdoor amphitheater surrounded by a walkable tree-lined path in the piazza's center. If the community were integrated with a design that included an inviting economic and social space, the sustainability of both aspects of the community would be improved as people would have both economic and social incentive to enter the space. Its design and separation from the economic center of the community keeps



surplus because of uncontrolled pricing. Businessmen were uneasy about buying such expensive commercial space in a new area with an unproven market. Thus, many of the units have gone unsold and the lack of demand in the area has forced many of the businesses that were able to initially establish themselves to go out of business.

Part of the lack of demand in Torraccia may be due to the initial price inflation. The high initial prices due to the developers' need to turn a profit on their investment scared businesses away in many cases and probably led to initial underdevelopment of the commercial space in Torraccia. Residents who moved into Torraccia were middle-income families moving to a quieter area to raise their children. They already had jobs that allowed them to move outside of the center Rome and buy their homes, but they did not have the money, necessity, or desire to start a business in Torraccia. Another relevant aspect of the commuting residents is that the residents had previously established shopping locales in the areas where they previously lived and continued to work. The fears of the businessmen became evident as the residents' familiarity with other sources of supply served as clarification for the lack of initial offerings in Torraccia. This furthermore forced residents to continue to shop outside of Torraccia and decreased demand in the area further. Over the last ten years the price of a commercial unit has dropped 30-40%. This is due to this cycle of lack of supply and lack of demand constantly reinforcing one another and was likely started by the plan for the use of the PEEP funding.

With efforts to develop as much housing as possible under the PEEP grant, Rome spread the money over a larger number of buildings, getting the developers to pick up the excess – by allowing them the concession of free market pricing. The result was a commercial development that was too large for the population of the development which subsequently led to the vacancy of ground floor commercial units. The Comune di Roma would probably have had a better outcome had they attracted developers in other ways or built the community in intervals. It may have been too ambitious to try and develop 9,000 units out of the PEEP money granted and the attempt to do so led to the conclusion that has been reached by the Vice President of Municipio V – that re-qualification is a more efficient investment of funds.<sup>50</sup>

The effects of stretching the PEEP money in the design of Torraccia as a new community are also evident in the transportation of the neighborhood. When Rome designed and built the roads for Torraccia they buffered the community from the rest of Rome. It is true that Torraccia

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<sup>50</sup> Interview with VP of Municipio V, Maurizio Cocciolo. 10 February 2005.

has direct access to the Ring Road but the exit that empties into Torraccia also services San Basilio. Yet, Torraccia's remote location has set it apart from the congested and chaotic center of Rome and is one of its most appealing features. To preserve this sense of privacy and separation, the designers of Torraccia built only one entrance to Torraccia from San Basilio, in addition to the Ring Road interchange. The San Basilio entrance is built a short distance from the Ring Road access ramp on Via G. Cappi, one of the peripheral streets of Torraccia. Thus, the city residents have access to the rest of Rome and to San Basilio, but San Basilio residents are not encouraged to come to Torraccia. They are pushed around the outside by the design.

Municipio V, Associazione Culturale di Torraccia (ACT), and the commercial business association of Torraccia all agree that one of community's main problems is its lack of connection to San Basilio. ACT and the Municipio are worried because there are no social ties that bond Torraccia to its surrounding community. The Municipio does not consider the development a success because there is no social fabric created and Torraccia is an island in the middle of San Basilio.<sup>51</sup> On this point the Comune di Rome agrees that Torraccia failed to create an urban fabric. The commercial association needs better connection to the consumer population to increase demand in the area, if they could draw on the entire population of the San Basilio quartiere, including Torraccia and Casal Monastero, the empty commercial units might begin to fill and the economic situation of Torraccia may begin to improve.

Rome's plan to have only two entrances to Torraccia also creates problems that the planners might have anticipated. The development was built with commuting families in mind. There is plenty of parking available, wide streets, and these new developments always favor new families in the hopes that they will stay and build a community. With 9,000 residential units all being occupied by young families with jobs elsewhere, the parents and children need to go to work and school every morning. When the schools for the area, which are required to be built where there are a certain number of housing units added, are not constructed at the same time as the rest of the development; this means that the majority of the population departs from Torraccia in the morning, thus creating a temporary vacancy until all return home for dinner or other activities. Add this with the traffic going into San Basilio from the Ring Road every weekday morning and a traffic congestion that lines cars up twenty-deep on the roads in Torraccia results.

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<sup>51</sup> *Ibid.*

The major cause of this problem is the combination of only one access point to San Basilio and the lack of schools in Torraccia. Parents must transport their children to school in the morning before going to work, and these schools are in San Basilio and Rebibbia. Because of this the more efficient Ring Road ramp does not meet its intended service potential – handling less than a third of the traffic leaving Torraccia in the morning. The road leading into San Basilio handles over two thirds of the traffic leaving Torraccia in addition to an equal or greater number of cars from the Ring Road. This is an obvious flaw in the design of the connectivity of Torraccia to the rest of Rome and hinders its intercommunity interactions.

The design of the community has some positives in spite of its flaws. The major point that the Comune di Roma will point out is that the primary goal of PEEP was achieved, even if the secondary goal of creating a new urban fabric failed. San Basilio received its infrastructure, and what was once illegal and marginalized housing is now legitimate with modern amenities. Also, the planning of the commerce around a central strip allows residents and employees from all parts of the community to access the commercial space within a minimal walking distance. The effectiveness of this plan can be seen in the distribution of bars evenly down the commercial spine, showing how if demand were present this commercial design would be logical for the distance between Torraccia San Basilio and the Ring Road. Additionally, the transportation within the community is well designed. The streets are wide with sidewalks on both sides of each street and there is plenty of parking for the residents and employees. Traffic congestion within Torraccia is a rare occurrence and flows well with the one way streets and grid pattern, the only problem is in the connection with San Basilio.

As a result of various laws implemented throughout the creation of the neighborhood, there are some hindrances to viable community growth. Between Law 167 and the affiliated PEEP II laws, the neighborhood's residential complexities conflict with Ebenezer's ideals for a sustainable development. For example, the neighborhood's housing units are private housing built with public funding creating the interesting relationship between the private developers and the City of Rome as previously discussed. As an incentive to the developers, Rome granted developers the right to sell commercial units at market value, while residential units had to be sold at subsidized prices.

The complications of the situation did not go away with the sale of the public housing units. One conflict is that Rome still owns the land in Torraccia. Residents buy housing units on a 99

year lease. After the first 99 years the residents can then enter into a new 99 year lease or the City of Rome can decide to sell the land to the residential unit owners, or a private entity. As time progresses residents will not want to be contractually committed to a 99 year lease, this will create a peak point sometime in the middle of the 99 years after which property will depreciate. For the first five years after purchasing their units the residents who bought their units at artificially low prices cannot sell their property. This law was put into place to prevent speculation and occupancy turnover. To aid this prevention of speculation is the preference toward young families that Arch. Gaglianone informed us that Rome had in developing Torraccia.<sup>52</sup> This meant that hopefully the families would move in and stay for a significant period of time to see all of their children through school. Currently, residents may not be as concerned about this lease contract, but it will be a factor in residential sustainability in the distant future, specifically when residents begin to think about the renewal of their leases.

The overall effect of the 99 year lease structure is unclear right now after only ten years, but due to changes in Italian politics, which are unstable, there is a possibility that the legislation guiding the 99 year lease structure will not even exist a century from now. If the lease structure survives, the 99 year lease may stabilize the demographics because as families grow older and children graduate, they will move out of Torraccia to avoid the confusion that will likely accompany the 99<sup>th</sup> year transition period. The families that have moved out to Torraccia have already exhibited a type of individual consideration that breaks from the traditional Italian system, so this moving trend would not be surprising. This situation might actually help the sustainability of Torraccia by creating a more constant demand for services that could potentially attract more commercial development and would allow for better provision of specific public services. The other situation is that exactly the opposite effect will stem from incentive to hold on to the housing units to the 99<sup>th</sup> year for some sort of reduced price in buying the unit again. This would tend to keep one family in a unit for an extended amount of time and the population would age progressively, possibly creating an aging demand that would then turnover after the first 99 years is done and start all over again.

As a bedroom community with a lack of accessibility and interaction with other neighborhoods, the community is severely isolated. People that live in the community work outside the community, while people that work in community live outside the community. This

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<sup>52</sup> Interview with Architect Gaglianone of Comune di Roma, 3 March 2005.

has to do again with the housing program that was initially more responsive to young families over older, possibly more economically stable families. The parents already had jobs outside the community, and only the money and desire to buy a house, there was no additional desire for any business pursuit. As a result, the residents of Torraccia do not stimulate deep social connections because they spend most of their time outside of the community with their jobs and their children, as the children cannot go to school in the community. The social connections the residents make due to their children's schooling in San Basilio or Rebibbia are good for stimulating interaction between Torraccia and the greater area. However, they are not as strong as potential connections within Torraccia itself, and the commuting nature of the social capital does not allow it to accumulate in Torraccia or the other communities. The workers and store owners, on the other hand, interact mostly with each other because they are the only ones in Torraccia during the day and thus their social interaction leaves with them every night and they build their stronger social bonds in their own communities.

One potential problem relating to the plan for the community and the demographics is a problem facing all governments and is especially prevalent in Italy. By the time Rome implements its plans to open the elementary school in Torraccia the major need will be for a middle school or high school. There are already a significant number of children of this age group who will continue to travel outside of the community for school. Having excess elementary school space may bring in more residents from outside of Torraccia increasing its commercial demand and social relationship with the greater community, but this will only exacerbate morning traffic issues stemming from the solitary design of Torraccia. To stem some of these demographic issues arising from the design of the community, participatory planning within the neighborhood would aid greatly. To have the residents work with the city and Municipio V in deciding what they want and need in the community would allow the residents' demands to be met within the community and contribute to capital flow.

To increase the sustainability of Torraccia's economic situation, Torraccia needs to attract the residents of San Basilio and Torraccia who are used to shopping elsewhere; this will in effect simulate more cash flow within the area of Torraccia and stabilize reinvestment in the economy of the community. Perhaps Torraccia retailers need to have different hours to accommodate commuters, or offer local discounts. Yet these initiatives would also need to modify the way Torraccia was designed under Law 167 and PEEP II financing. In making these changes that

would increase social and economic flows in Torraccia there might be some resistance from the residents.

The residents are happy with the design; they like the tranquility and the safety of the secluded community. They all talk about more connection and entertainment, but the residents are all happy with the community as it is now. There are never on-duty police in Torraccia, yet everyone feels safe and the children have plenty of places to meet and hang out in the evening. Bringing all these people through Torraccia has the potentially unfortunate side effect of opening Torraccia up to the bad as well. Torraccia is a safe neighborhood now and the design is largely responsible, but the sustainability and viability of a secluded bedroom community is minimal, with minimal connection between the needs of the residents and reinvestment in the economy only hindering future community sustainability as defined by Ebenezer.

The design of Torraccia under Law 167 and PEEP II financing has shaped the demographic and the transportation and economic character of the community drastically. The young families that were brought into the community already had connections outside of Torraccia that decreased demand in Torraccia, thus decreasing social capital as little economic activity occurred. The families enjoy the seclusion of the transportation design but are stuck in traffic every morning, as are numerous other cars from the Ring Road, trying to get into San Basilio. Yet Torraccia is not a lost cause, there is a cultural association, some social interaction and use of public space on the weekends, and a strong base of income flowing into the houses. There is no doubt that the Torraccia design could be a sustainable model for development, contingent to suggestions that have been made thus far.

## **New Policies**

In recent decades, Rome has grown in quantitative terms particularly on the periphery. The Comune di Roma realized the city's need for urban recovery and re-qualification in order to remain a viable metropolitan area. They recently developed the New Urban Development Plan, which aims to achieve qualitative development of the city, by: safeguarding the environment; defining an accessible rail network; re-qualifying and recovering the existing city; identifying new central units for the transfer of urban functions; and improving access to the metropolitan areas. The plan will decentralize activities within the urban fabric of the outlying areas and promote residential conversion in the more central areas. The plan is intended to transform and

improve vast areas of the city (especially where it is most needed) by boosting the input of urban quality, with improved services, and careful attention to the city's aesthetics. In order to provide services and infrastructure to essential areas of the city, the Municipal Administration put forward 11 Articles that consists of re-qualification and urban recovery programs, and transport and mobility programs. The Comune di Roma would like to re-introduce Rome to the world as a city of peace, modernity, competitiveness and beauty.<sup>53</sup>

The 11 Articles are a means to achieve urban recovery in 11 suburbs of Rome. The Articles cover one-third of Rome's peripheral area and involve 440,000 citizens. A total of 463 new development projects are foreseen: 346 public and 117 private. The projects amount to about 2.5 billion euros, about 675 million of which are earmarked for the completion of public works. The 11 suburban districts comprise: Tor Bella Monaca, Corivale, San Basilio, Labaro, Primavalle, Palmarola, Laurentine, Acilia, Magliana, Fidene, Valle Aurelia. The San Basilio re-qualification effort includes Torraccia as well. The projects of Torraccia involve re-structuring the neighborhood's central space, introducing public services, instituting connective roads, creating a metro station link and preserving public green space.



**Central Community Space.** One purpose of the New Urban Development Plan is to redefine the community central space in each neighborhood. Like many traditional Italian city designs, the piazza is the central space for communities and all principal roads lead to it. In the case of Torraccia, Piazza Gaspare Ambrosini is supposed to exist as the central space in the community. However, the notion of the central piazza being the focal point of the neighborhood is defied. The design of Piazza Gaspare Ambrosini does not encourage the ideals of an Italian piazza. According to Maurizio Cocciolo (Vice President of Municipio V), a piazza is suppose to develop and integrate the local community, while promoting social, economic, political and cultural activities.<sup>54</sup> Torraccia's central piazza is not well connected or accessible by transportation. It is located within the commercial backbone and a four-story apartment complex surrounds the piazza on all four sides; it is isolated from the rest of the community. The piazza cannot be seen from principal streets unless you pass through one of six entrances, which are not

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<sup>53</sup> Meeting with Comune di Roma, 3 March 2005.

<sup>54</sup> Interview with VP of Municipio V, Maurizio Cocciolo, 10 February 2005.

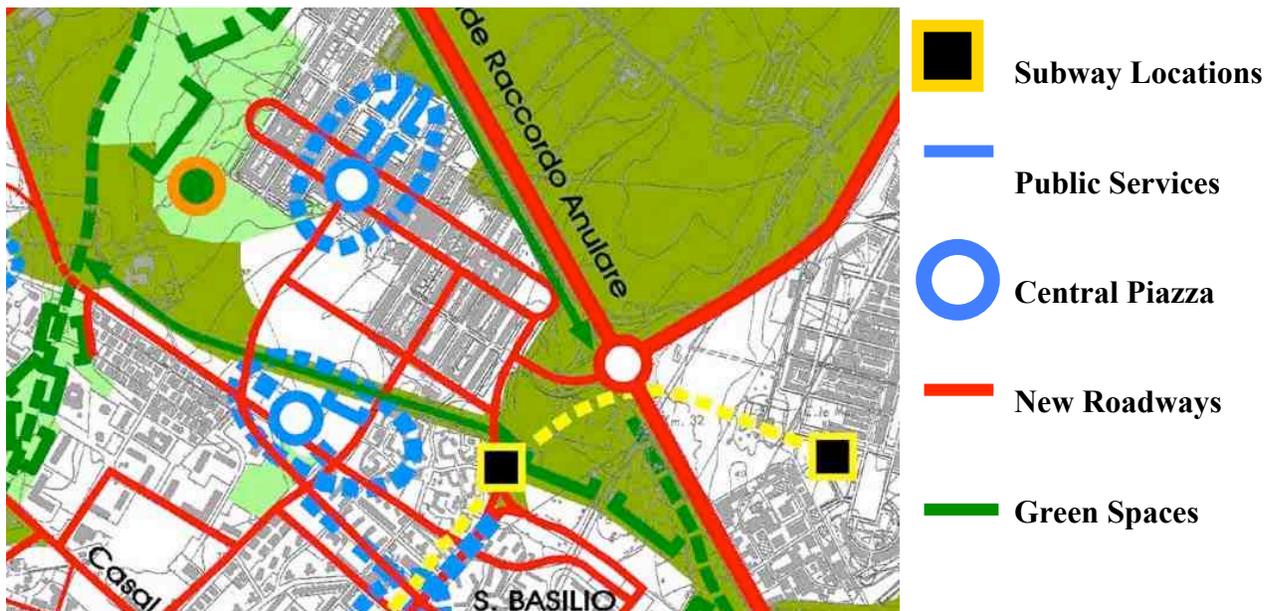
accessible by mass transit. In short, the design has prohibited the piazza from achieving its goal of uniting the community.

The Plan intends to revitalize Piazza Gaspare Ambrosini through the conversion of current vacant commercial spaces to public service offices. This is an attempt to reinstate Piazza Gaspare Ambrosini as a focal point of the community by surrounding it with public services, as well as commercial services; this will ideally attract people to the center and stimulate engagement. After meetings with Municipio V and Associazione Commerciale Torraccia (ACT), other policy addendums are anticipated that will improve the quality of community life surrounding Piazza Gaspare Ambrosini. One suggestion is improving accessibility to the piazza. For example, instituting more entrances or completely removing first floor commercial units and converting them into open passage ways. The commercial spaces that would be impacted by the reconstruction of ground-level spaces that surround the piazza could be relocated to vacant store spaces available on the commercial strips. As a result the piazza would be physically open to the community, attracting pedestrians and encouraging more engagement.

**Public Services.** The New Urban Development Plan implements first-rate public services and re-appraisal of the housing sector. Being a new community, Torraccia does not have many problems with housing but it lacks public amenities. The Plan intends to construct more public services such as education, recreation, electricity, gas, health care, police services and water services and other essential public commodities. These services will be located northeast of the piazza. Having public amenities within proximity will deter Torraccians from going outside the community for services.

Based on survey data, citizens would like Torraccia to have entertainment services such as a bookstore or cinema. One suggestion is that the Comune di Roma contact the citizens either through surveys or public hearings to receive feedback about what particular services the citizens' desire. Communication between the residents and the Comune will increase participatory planning and the citizens will probably respond better to the new constructions occurring in their area.

**Roadway System Plan.** The initial policies that guided the development of Torraccia (Law 167 and the second PEEP project) had an isolating affect on the community. The development is not only located on the northeastern periphery of Rome but it lacks adequate mobility infrastructure. There are limited entry and exit ways for traveling in and out of Torraccia (hence via Ring Road and San Basilio); Torraccia’s mobility scale is restrictive; and lacks efficient connectivity to its neighboring communities. These mobility issues have been recognized by the Comune di Roma which influenced the creation of the Nuovo Piano Regolatore Generale (NPRG) di Roma. The NPRG has instituted a number of mobility programs – *Programma Integrato della Mobilità, Piano Urbano di Mobilità, Piano Generale del Traffico Urbano, Piano Urbano Parcheggi*, in an effort to stabilize and integrate mobility in, out and around the Torraccia area.



The roadway system plan was created taking into account roads that already existed and selected roadways that were constructed only in part by the old plan under Law 167. The roadway plan works to stabilize mobility in and around Torraccia, and integrate the community of Torraccia with other nearby peripheral neighborhoods. It seeks to execute the construction of three roads in Torraccia; two of which are extensions of existing roads, Via Cappi, Via Costantino, and the third road (partially constructed) that will intersect Via Antonio Castellari (southwest end of Piazza Gaspare Ambrosini and parallel to Via Constantino). The three roads

will extend southwards to San Basilio and loop around the entire community. The extended Via Costantino will cut straight through San Basilio and continue south towards the center of Rome.

The construction of these roads will institute a more flexible entry and exit-way commuting to and from Torraccia. This will potentially decentralize the traffic and bottleneck congestion on the Ring Road and offer an efficient alternative for Torraccian commuters. The idea is to shift the flow of automobile traffic to arteries that are separated from the residential area<sup>55</sup>. Additionally, the two commercial strips will become a commercial ring. The three roads will have easy access to Torraccia's commercial strips, running straight into Via Menichella. This will potentially prompt more commercial activity and bring outside capital into the community. In short, the policies that shape the development of these extension roads will create a more efficient traffic flow and generate commercial activity.

**Articles 11 and Community Connectivity.** The integration program of “Articles 11” will execute the construction of two roads from Torraccia that directly connect to San Cleto (southwest of Torraccia) and Casal Monastero (west of Torraccia). This construction effort attempts to foster community connectivity, physically with the introduction of roads and will consequently foster social and cultural connections. Connecting Torraccia to San Cleto, Casal Monastero and the greater San Basilio area to which it belongs will promote cultural integrations and social interactions. Residents of Torraccia, San Cleto, and Casal Monastero will have the opportunity to utilize services provided by each community and interact amongst other residents by attending neighborhood plays and events. The interweaving and connecting of communities, such as Torraccia, San Cleto, and Casal Monastero, has the ability to stimulate social capital and economic growth. Residents from the different communities can build social relationships among each other when utilizing different commercial services, and collectively this may perpetuate sustainability within Torraccia.

Although the institution of these roads is beneficial to Torraccia it can have negative impacts as well. The construction of these roads can increase traffic intensity in Torraccia. This is detrimental to the character of the community – as a pedestrian friendly and family-oriented community. The Torraccians' contentment with the safety of the neighborhood will depreciate. Torraccians are satisfied with the remoteness of the neighborhood because it does not necessitate the polizia or other sorts of safety patrol; the neighborhood is safe. To offset these issues, a

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<sup>55</sup> Comune di Roma

policy recommendation would improve the scale of mobility in Torraccia by implementing mass transit that offers efficient connection between the neighborhoods while discouraging the use of personal vehicles. Public transportation will also facilitate social engagement and civic familiarity. In addition to improving the scale of mobility, another addendum to the mobility policy would be to further instill a feeling of safety in Torraccia; for example police presence can be located mainly on the periphery of the neighborhood (where the entry and exit roads are located) to convey a feeling of protection and limit their presence in the center of the neighborhood to preserve the vitality of the community.

 **Rail Care**'. A second initiative currently in effect in Torraccia is the construction of a new subway system, which will also work to stabilize the scale of mobility available in Torraccia. The construction of the new subway station attempts to provide more convenient and efficient means of commuting from the periphery to the center of Rome. Both San Basilio and Casal Monastero are working with Torraccia on the construction of the new subway system. The new subway station is to be built above ground and will cross over the Grande Raccordo Anulare. The line that will occupy the new station is an extension of the B line which currently runs from Laurentina to Rebibbia. Under the new development plan the B line will continue from Rebibbia to the new San Basilio station, Torraccia Station and then Casal Monastero, respectively. The Torraccia Station and the Casal Monastero station will be structured similar to the Ponte Mammolo station; the two stations will have parking and a range of buses available for commuters.

If the subway project strives to discourage private vehicle use Torraccians' will need more incentive to utilize public transportation. The current ratio at rush hour is 60% private and 40% public according to Comune di Roma, and Torraccia has illustrated a greater use of private vehicles and consequently, an under-use of public transportation. With the construction of new roads in Torraccia and alternate commuting routes, private vehicle use would be seen as advantageous to Torraccian commuters. A possible policy addendum would be to grant Torraccians parking permits for the Torraccia subway station. So, when parents drive their children to school they can park their cars at the station and take the metro to work. The average family in Torraccia owns 2 to 3 cars, and if there is no incentive to take public transport they will not. In short, the current mobility policies that will guide the future transportation infrastructure

have the potential to generate stability and sustainability within mobility, economic and social networks.

**Green Space.** Safeguarding and developing the environment are major components of the New Development Plan. Rome’s “open area” plan (land that cannot be used for building purposes)<sup>56</sup> testifies to the city’s efforts in the field of environmental sustainability and regeneration. In Torraccia, the ex-farm land located on the north end of the neighborhood behind the new gymnasium construction will be developed into an “open area.” This “open area” is public green space containing soccer fields and a small, comfortable park. The New Development Plan also intends to establish regulations preserving local historical architecture. These regulations will preserve the historical villa on the periphery of Torraccia as well as the creation and preservation of green space for the benefit of the community.

## **Conclusion**

Torraccia is a neighborhood full of potential, and the Comune di Roma and Municipio V have plans to tap into that source for the future improvement of the community. Most of the weaknesses are resultant of past policy regulations concerning the infrastructure, design and functionality of the neighborhood, namely Law 167 and PEEP II. These issues have created an environment that does not fully access the purchasing power of Torraccia because the available commercial options do not engage the interest of the residents; or, promote social interaction because the intended center of activity, Piazza G. Ambrosini, is not used for this function; and the design of community does not promote positive intra or inter-community transportation. However, the strengths of the neighborhood lie in its security and its potential to evolve into a more socially and economically strong community. Ebenezer’s policy suggestions are not unlike those found in the New Urban Development Plan of the Comune – both seek to create an atmosphere that supports strong economic activity and accommodates the commuters of Torraccia and San Basilio. Participatory planning will likely be the most effective approach to this issue, almost certainly ensuring that any additions to the community will be well utilized, enjoyed and financially successful. Ebenezer intends to open the door to the type of integrated approach suggested by presenting the comprehensive findings to the community and

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<sup>56</sup> *Ibid.*

implementing the feedback received in the final report. The collected data suggest that Torraccia is unsustainable by this firm's definition; however, change is an attainable goal with the implementation of the policies suggested here and those found in the New Urban Development Plan of the Comune di Roma.



# **SURVEY DATA**

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



SUBMITTED BY EBENEZER SUSTAINABILITY CONSULTING

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MAY 2, 2005

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## SURVEYS

**Torraccia Transportation Data .....F-1**

**Torraccia Demographic Data .....F-2**

## Torraccia Transportation Data

### Riders Getting On

Trip Start Time	# of Riders Already On	Bus Stop 1 (Nicolo)	2(Jemolo1)	3 (Jemolo2)	4 (Tuozzi1)	5 (Bonifacio-Main Stop)	6 (Jovane)	7(Tuozzi 2)	8 (Menichella 1)	9 (Menichella 2)	10 (Cappi)	Trip End Time
7:10		0	0	0	0	2	3	3	8	3	4	
7:56		1	0	1	0	9	4	5	11	4	2	
9:30					9	3	2	11	4	0		
10:15	7	0		3		2	2	2	9	2	1	
10:49	7	0	0	0		1			7	3		
11:10	10	0		0		2	1		3	1	10	
11:25	8	0	0	0	0	1	1	1	5	1	1	
11:55	14	0	0	0		2						
13:13	15	0	0	0	0	0	2	0	5	1	0	13:36
13:40	10	0			1	1	1	2	2	2	0	14:11
14:15	19	0	0	0	0	0	2	8	7	0	0	
17:05	15					2	0	5	1	0	0	17:25
17:30	10	0	0	0	0	1	1	0	5	0	0	17:50
19:00		0	0	0	0	1			4	2		

### Riders Getting Off

Trip Start Time	# of Riders Already On	Bus Stop 1 (Nicolo)	2(Jemolo1)	3 (Jemolo2)	4 (Tuozzi1)	5 (Bonifacio-Main Stop)	6 (Jovane)	7(Tuozzi 2)	8 (Menichella 1)	9 (Menichella 2)	10 (Cappi)	Trip End Time
7:10		0	0	1	0	1	0	0	0	0	0	
7:56		0	1	3	2	2	0	0	0	0	0	
9:30						2	0	0	0	0	0	
10:15	7	1	2	3	1	3	0	2	1	0		
10:49	7	1	1	4		1			0	0		
11:10	10	2		8		1	2		2	1	1	
11:25	8	3		5	2	0	0	0	0	0		
11:55	14	2	2	6		3						
13:13	15	0	1	6	4	4	0	0	0	0	1	13:36
13:40	10	3	2	5	2	1	0	0	0	0	0	14:11
14:15	19	2	4	6	6	1	0	0	0	0	0	
17:05	15	1	2	9	1	2	0	0	0	0	0	17:25
17:30	10	1	0	3	6	0	0	0	0	0	0	17:50
19:00		4	2	7	4	4			0	0		

### Loop Ramp Intersection per 15 minutes

Time	Loop In	Loop Out	SB In	SB Out
7:20-7:35	23	64	6	4
8:15-8:30	156	100	12	7
10:40-10:50	61		21	
10:50 - 11:00		74		7
11:35-11:45		52		10
11:45-11:55	64		19	
13:15-13:35	42	52	13	7
14:55-15:00	105	75	3	0
16:43-16:53	76		60	
16:56 - 17:06		97		15
17:43-17:48		54		12
17:48 - 17:53	99		42	

### Nicolo Bus Stop

Time	Loop In	Loop Out	SB In	SB Out
7:35-7:50	1	5	7	138
8:30-8:45	0	1	9	215
13:40-13:55	4	7	44	25
14:40-14:50	12	3	45	36



## Torraccia Demographic Data

<b>What does Torraccia need most?</b>					
Transportation	Employment	Entertainment	Recreation	Open Space	Other
5	5	10	3	1	3
<b>Where did you live before Torraccia?</b>					
Rome Center	Other Periphery	Suburbs	Outside Rome		
1	15	1			
<b>Employment by Location</b>					
Home	Torraccia	Center	Periphery	Suburb	Outside Rome
3	2	12	16	2	2
<b>Where do you shop for food?</b>					
Torraccia	Center	Periphery	Suburb	Outside Rome	
16		6			
<b>Where do you shop for other goods?</b>					
Torraccia	Center	Periphery	Suburb	Outside Rome	
5	6	9			
<b>Where do you go for entertainment?</b>					
Torraccia	Center	Periphery	Suburb	Outside Rome	
4	12	1	1	4	
<b>Do you go to church?</b>					
Yes	No				
10	6				
<b>If yes, where do you go to church?</b>					
Torraccia	Center	Periphery	Suburb	Outside Rome	
9		1			
<b>Where do you go for medical care?</b>					
Torraccia	Center	Periphery	Suburb	Outside Rome	
12	1	7			
<b>Where do you eat dinner?</b>					
Home	Torraccia	Center	Periphery	Suburb	Outside Rome
16					
<b>Where do your friends live?</b>					
Torraccia	Center	Periphery	Suburb	Outside Rome	
15	3	9	4	4	

# MAPS

AN EVALUATION OF SUSTAINABILITY: TORRACCIA DI SAN BASILIO



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# Housing and Construction

- Low
- Medium
- High
- Under Construction

