

## CHAPTER 3: METHODOLOGY

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In the first section of this chapter, a conceptual framework is presented from which the variables were defined and operationalized. The succeeding section presents the appropriate research strategy for the study. The third section explains the preparation of the survey instrument, site observation and mapping behavior, and the morphological data. The fourth section is a brief discussion of background, site selection, and description. The last section describes how the data was collected. The method of analysis for the research methodology is explained in the last section.

### **Section 1: Conceptual framework**

The built environment embodies images, values, meanings and symbols that are influenced by culture. Artifacts, behaviors, and the environment are stimuli that provide tangible expressions to the function, assigned values, meanings, and symbols. Function, value, and meaning are essential components in experiencing the built environment. These components enable people to structure and act accordingly within the environment. Figure 1 is a diagram of the constructs of these components and the relationship of their domains and attributes.

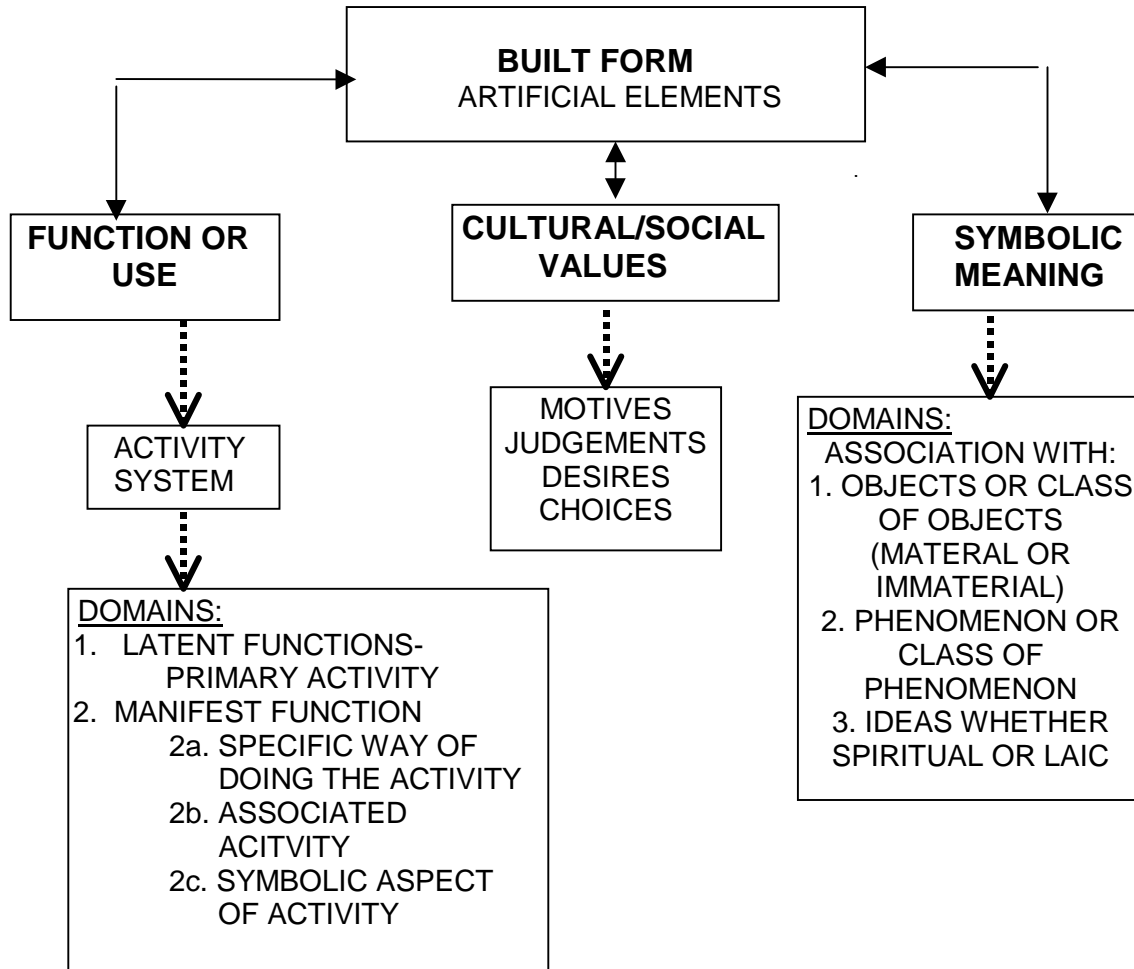
The built environment refers to the changes people made in the physical environment such as open spaces, building, infrastructures, and other artificial elements (Lang 1994). It is a theater where we conduct our lifestyles, the setting for our memories, and experiences. For this study, the built form refers to the Biñan town center, its existing structures and spaces.

Function is defined as the activity systems taking place in space and time within the built environment. The domains of function are the latent and manifest functions. Manifest (clear or obvious) function is the primary activity that articulates the specific ways in which the activity is conducted. For example, walking, eating, shopping, going to church, and so forth. Latent (concealed) function is realized in the specific manner and symbolic meaning of doing the primary activity. This activity may pertain to economics, consumption, food, artifacts and social possession. Part of latent function is the associated activities that spins-off from the primary activity. For example, buying food in a grocery is the primary activity that can spin off to an

associated activity such as talking to a friend while in the grocery. The symbolic aspect of the primary activity may indicate that the food buying facilitates the ritual of cooking for the family. Function of the built form is determined by the primary and secondary activities that take place (Rapoport 1977).

Cultural and social values are manifested in the built environment through the events and activities conducted in such places. Shaul and Furbee (1998) define culture as “coming from the Latin *cultura*, cultivation, agricultural field. The idea is that human beliefs (as opposed to the organizations of humans that articulate them in a given social group) forms a basis for everyday behavior” (16). In human behavior studies, attitudes and beliefs have long been used to evaluate values. Values can be measured through individual survey responses addressing the motives, desires, judgments, and choices that people make in relation to a place’s function.

When people experience an environment, they consciously or subconsciously react to it by assigning symbolic identifications to material elements, areas, and activities. Response measures for symbolic meaning of built form is based on the association “with an object or a phenomenon, or classes of objects or phenomena; something that stands for, denotes or represents some idea, whether spiritual or laic, that is immaterial or abstract.” Symbolic meanings may depend on choices of association that are based on past experiences and cultural influences. Symbolism assists in determining people’s attitudes towards the environment because it strengthens the way a place functions, its meaning, and values (Lang 1994, 27-28; Rapoport 1977).



**FIGURE 3. DIAGRAM OF CONSTRUCTS**

## **Section 2: Research Strategy**

The primary purpose of this study was to identify the residents' values about, symbolic meanings of, and uses of the town center. Because this study focused on collecting information from a small group of town residents, a combination of qualitative and quantitative methods were utilized. In addition, site observation and behavior mapping was conducted to acquire more information about how the actual place is used and how the population behaves in this environment. To identify the physical changes of the built form of the town center, a morphological analysis of the structures and spaces from 1911 to the present was conducted. By studying the history of the urban morphology of the town center, implicit values manifested in the urban fabric can help determine the changes and continuum of the built form.

A qualitative method for the survey instrument was used because “face-to-face interviews provide an excellent way of exploring complex feelings and attitudes. They can be used to assess beliefs and opinions as well as personality characteristics” (Sommer and Sommer 1991, 107-108). Likewise, interviews can achieve a higher response rate than mail surveys. However, people do not always do what they say; therefore, another method of inquiry is needed. Site observation provides a validation between words and actions (Babbie 1998; Sommer & Sommer 1991). This quantitative section was to determine the internal validity and reliability to the responses regarding place value and symbolic meaning in the qualitative section. An adjective list from Burgess' study and a Likert scale for ranking places were used (Burgess 1978). A more detailed discussion of each question is explained under section 2.4.1.

A methodological triangulation of site observation and behavior mapping was used to address reliability and validity concerns. Methodological triangulation is the use of multiple methods to study the same topic. The use of a single method in a face-to-face interview study has limitations and makes reliability questionable because there are instances when people do not mean what they say. Observation is an effective method for studying nonverbal behavior in a specific setting (Sommer & Sommer 1991, 48, 126). However, behavior studies being qualitative rather than quantitative are not an appropriate means to arrive at statistical descriptions of a large population.

To acquire more information regarding the use of the town center, site observation and behavior mapping is another useful strategy. Casual observation of the site was conducted without prearranged categories to determine the actual events and activities taking place at different times of the day.

A morphological analysis was also done to determine the site's evolution of built form. These artificial arrangements provide the settings for human life and activities. The structure of the physical elements and spaces in the urban fabric points out the relationships between different scales of the environment and the people contained in it. These relationships between buildings, building heights, streets, lots, and open spaces are indicators of social behavior that can communicate cultural values, priorities, and conflicts. To understand the environment it is necessary to investigate not only the social-cultural interaction of the people, but the evolution of the built form as well. Urban morphological analysis is one method that strives equally to understand the underlying cultural values reflected in the built form and humans who acted on the that environment (Lang 1994; Moudon 1994).

## 2.1 Site Background

The town was selected as the study site based on the following criteria:

- a) The town must have a plaza or town square that was established for at least one century. This was important in order to trace the morphological aspects of the physical artifacts reflective of cultural values.
- b) The town square must show functions such economic, cultural, or recreation activities. It is necessary that the study site have these culturally related uses and activities, which can define the social structure of a place.

Biñan is a town situated in the province of Laguna, Philippines. Biñan began as a district of Sta. Rosa and eventually became a town in 1771. According to historical documents, the Spaniards founded Sta. Rosa at the end of June 1571, a month after the founding of Manila.

The early development of the Biñan Town Center shows a heavy Spanish influence. The fusion of church and state can be seen in the arrangement of the municipal hall, church, and

public market. The pattern, showing proximity of these structures to one another, reflects the practice of consultation and collaboration during that period.

Biñan is traditionally known as a market center or trading hub for farmers and traders, serving adjacent towns such as Muntinglupa, Binangonan, Calamba and Carmona and provinces as far as Cavite, Batangas and Quezon. An historical-spatial study of the growth of Manila indicates that the coverage and pace of suburbanization is greater in the south, of which Laguna is part primarily due to its less mountainous topography (National Regional Office IV 1983). The flat terrain offers possibilities for a blend of urban and rural environments.

The town center or *bayan* is an open space that served as a site for a variety of social functions such as political campaigns, religious processions, and social events during festive seasons in that era. The foundation of Hispanic colonial towns was based on the Law of the Indies, which states the need for a plaza for trade, defense, religious, and social purposes. Most rural town centers in the Philippines follow this precept and are patterned after the walled city in Manila built by the Spaniards called *Intramuros*. (Reed 1978,71-73).

## 2.2 Site Selection and Description

The selected site is the town of Biñan in the province of Laguna, Philippines. It is situated in the southern Tagalog region of the island of Luzon (refer to Figure 3 & 4). The municipality of Biñan is comprised of 24 barrios (*barangays*) and has a population of approximately 275,000. It occupies 10,475 acres (4,350 hectares) of generally flat land that is utilized for residential, commercial, and industrial purposes. Because of a projected annual growth rate of 9% per year, Biñan's projected population for 1999 was 279,475. In 1995, the latest year for which census figures exist, the male population was slightly lower than the female population. Seven of the of 24 *barangays* (Canlalay, Dela Paz., Malaban, San Antonio, San Francisco, San Vicente, and Santo Domingo) contributed over 73% of the of the 1995 population.



Figure 4. Location of the Philippines in the Southeast Asia Region



Figure 5. The Study Site

In 1995, children and dependents, below 15 and over 65 years, comprised about 41% of the total population. A high percentage of the population had opportunities to receive formal education: 46% have received elementary education, 34% have received secondary education, 8% have received college education, while 9% were degree holders. Only 3% had completed no grade.

In 1995, the labor force consisted of 79,991 of the municipality's total population. Of this population, 47,850 (59.8%) were employed, 1,991 (2.5%) were unemployed, while 30,150 (37.7%) were not economically active. Most residents were waged or salaried workers (Binan Development Plan, 1990).

Because Binan is situated within the urbanizing orbit of Metro Manila, the municipality has experienced rapid growth in the last decade that has resulted in an immense change in the town center. Currently, the town center still functions as a place for social gathering, but with significant changes in urban patterns. Old two-story residential houses were replaced by commercial building blocks. Chaotic traffic build-up, building developments, crowding, and pollution from the prolific growth around the town's fringe are continuously plaguing the town center. All these have threatened the aesthetic quality of the heart of the town center. Changes in urban elements can be observed in the conversion of the plaza<sup>1</sup> into a covered basketball court now used more popularly for recreational, social, and cultural functions. The plaza conversion reflected changes in economic, political, and cultural values.

### 2.3 Sampling Frame

The random sampling of 56 households (respondents) for each of the eight *barangays* were based on the selection of main roads and minor roads or alleys from the 1980 planimetric map. Since larger residences are located on the main roads, this indicates that these households belong to the middle income to upper income groups. On the other hand, smaller and denser housing are located on minor roads and alleys, which indicate that these household belong to the low-income group. Due to the time constraint two households representing the upper income

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<sup>1</sup>Plaza is a term used by town folks referring to the same open space with a stage. The entire space was converted into a basketball court in the mid-1980s.



group, two from the middle income group and three from the low-income group were selected for each *barangay*.

## 2.4 Preparation

### 2.4.1 Questionnaire Development

#### 2.4.1.1 Residents

The survey questionnaire was first developed in English (see Appendix A) to serve as a guide to the *Tagalog*<sup>2</sup> translation (see Appendix B) when the survey instrument was administered in the Philippines. The first step in formulating the questions for the survey included the identification of significant places in the town center. Based on the researcher's prior knowledge and current information from photographs, places such as the parish church, municipal hall, basketball court, retail shops, street retail, and the Rizal monument were identified as the most used places in the town center. The next step was to develop a standard set of questions that applied to five identified places, all places other than the Rizal monument. As the Rizal monument is not used in a physical sense, a different set of question was formulated.

The interview included closed-ended and open-ended questions. Questions requiring photographs were presented together with the relevant questions.

The first page of the survey is an axonometric view of the town center. It was provided to help the respondents remember the place and to limit the study boundaries of the town center. It also stated the purpose of the study and the researcher's name.

### Survey Section One

The first section of the survey inquired about the places the residents visited and the frequency of their visits during the previous month. Succeeding questions for each specific place consisted of a set of open-ended questions designed to determine and measure the function of the place, the value of the place, and the symbolic meaning attached to each place.

The first six questions are background about visits to the town center, the mode of

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<sup>2</sup>*Tagalog* is the language of the *Tagalog* region situated in island of Luzon in the Philippines.

transportation to the town center, and the frequency of visits to the specific places of the town center. These questions determined which places were used and how frequently they were used (see Appendix A). These closed-ended questions determined the intended uses and other spin-off uses of specific places at the town center.

To find out the function of the place, the primary activity and the specific way of doing the activity as attributes of function, questions inquired about the purpose of the visit that occurred for each place. In addition, the specific places visited, the time of visit, and length of time for the intended activity were queried (7- A1, B1, C1, D1, F1, F2, & G1).

In order to determine the meaning or value (latent function) of the primary activity (manifest function) (7-A2, B3, C2, D2, F3, & G2) and meaning of the place (A4, B2, C3, D3, F4, & G3) open-ended questions asked what benefit was accrued from the activity and why the place was preferred. The temporal aspect of the activity was inquired to evaluate why the activity was done at the specific time of the day (A3, B5, C4, D4, F6, G4).

To determine the associated activities that are a spin-off from the primary activity, questions regarding other activities, which occurred while engaged in the primary activity were included (A5, B4, C5, D5, F5, G5).

To identify what the respondents value in the specific places, they were asked to list the 3 most important physical features or places they want to retain and explain why (A6, B6, C6, D6, E3, F7, G6, & 17). These questions elicited the respondents' opinions about important places that indicated the values assigned to each place.

The initial site observation and interviews with local officials, it was determined that the Rizal monument was utilized only in official ceremonies such as the national day or Rizal Day. The monument is barred from any daily use or activity. Thus, its general function is for visual use. Background questions inquired if they noticed the monument during the past month and its purpose the town center (7-E1 & E2).

To determine the symbolic meaning attached to the town center as a whole, a photograph was used to elicit respondents' impressions, descriptions, and feelings for the place. The photographs were used as references where participants were asked the symbolic meaning they assigned to each place. Participants were asked for "word/s that come to mind when looking at the photograph" (A7, B7, C7, D7, E4, F8, G7, 16, & 18). The first word/s stated by the respondents associated meaning/s of material or immaterial objects, ideas or phenomenon that are significant to the respondents. The following are descriptions of the photographs (refer to Figure 6 –15).

- ◆ Photograph #1 – An aerial view of the church façade, bell tower, and a portion of the municipal hall facing north. The street scene showed street vendors and pedestrians moving to the east and west.
- ◆ Photograph #2 – An aerial view of the municipal building façade facing north with a portion of the Rizal monument in the foreground. Vehicles are parked in front and a few street vendors are present on the right section of the building. Pedestrian flow is towards the direction of the public market.
- ◆ Photograph #3 – An aerial view of the public market façade lined with street vendors. Very high pedestrian activity is happening in front of the market.
- ◆ Photograph #4 – An aerial view of the basketball court showing the southern and western side of the building. Low pedestrian and vehicular activity is present.
- ◆ Photograph #5 - A normal view of the Rizal monument facing west with retail shops on the background.
- ◆ Photograph #6 – A normal view of the retail shops on the south side of the basketball court showing north and east sides of the structure. The street scene shows vehicular and pedestrian movement to the east and west directions.

- ◆ Photograph #7 – An aerial view of retail shops facing the north and east sides of the Rizal monument with the church patio and municipal building in the foreground. Vehicles occupy the parking areas around the retail shops. Pedestrian activity is minimal.
  
- ◆ Photograph # 8 – An aerial view of retail shops facing the public market facade and north side of Rizal monument. The municipal building roof is on the foreground. Minimal vehicular and pedestrian activity is present.
  
- ◆ Photograph #9 – A normal view showing street vendors and street retailers.
  
- ◆ Photograph #10 – An aerial view of the town center showing the parish church, municipal hall, Rizal monument, and portion of retail shops. Pedestrian activity is high. Vehicles occupy most of the parking areas in front of the retail shops.



Figure 6. **Photo. 1 - Parish Church**



Figure 7. **Photo 2 – Municipal Building**



Figure 8. **Photo 3 – Public Market**



Figure 9. **Photo 4 – Basketball Court**



Figure 10. Photo 5 – Rizal Monument



Figure 11. Photo 6 – Retail shops on the South Side of the Basketball Court



Figure 12. **Photo 7 – Retail Shops facing the North Side of Rizal Monument and Basketball Court**



Figure 13. **Photo 8 – Retail Shops Facing the Public Market**





Figure 14. **Photo 9 – Street Vendors**



Figure 15. **Photo 10 – Binan Town Center**

## Survey Section Two

The second section of the survey was designed to inquire about the type of events the residents liked and disliked in the town center. Information about where the respondents bring their children was also elicited to determine the value of specific places. To determine the value as well as use of the built form, types of activities such as events and performances (8-9) were included. In addition, a list of events and performances that are disliked implied the respondents' preference of use about what activities should take place in the town center (10).

For respondents who have children, questions regarding places they choose to or choose not to bring their children supported their value judgment of the town center (11-14).

To determine the respondents' images and perceptions of the town center's built environment, questions inquired about 3 major problems in the town center (15). Ranking of a bipolar adjective list extracted from another study done in England (Burgess 1978) was designed to help determine the symbolic meaning and a Likert scale was used to measure the place value of the town center (18 & 19). These questions revealed the respondents' judgments and choices relative to the importance and value of the town center to each of them. The last section of the survey provided demographic information about respondents.

A code book for the survey instrument was prepared to assist in quantification of the data gathered (See Appendix C). Coding is defined as "the task of classifying answers into fixed categories" (Sommer & Sommer 1991, 120). The code book describes the location of variables and value labels used in a computer analysis.

### 2.4.1.2 Key Informants

Questions of key informants (architects, engineers, businessmen and government officials) involved in the community and town center activities were useful for determining the past and future planning agenda for the town center. In addition, their opinions and attitudes towards town center development was elicited. Key informants belonging to private sector groups were interviewed to gather their opinions about current use or functions of the town center (see Appendix D).

## 2.5 Pre-test of Survey Instrument

Prior to the pre-test of the survey instrument, a two-day site observation and interviews with local government officials were conducted to determine significant places of use. The observation was done during the peak hours of the morning (7:00 – 10:00 am) and afternoon (4:00 – 6:00 pm). The results of the observations and interviews were compared to the survey instrument to ensure that the significant places were incorporated.

A set of survey questionnaires was translated into *Tagalog* (see Appendix B). Pre-testing was administered to 12 residents in the vicinity of the town center. Interviews were conducted between 8:00 – 10:00 in the morning, between 3:00 – 5:00 in the afternoon, and between 6:00 – 9:00 in the evening to gauge the effect of time and respondents' eagerness to engage in the interview. The following survey results were noted:

- 1) The difficult or ambiguous questions were those related to manifest activity, in particular, the question “what benefits did you get from the stated activity?” The researcher had to explain further or use other *Tagalog* words to clarify the question to the respondents. For questions about the value of place, for example, “what are the 3 important features/places you want to maintain?” the respondents had a difficult time understanding the *Tagalog* translation of “maintain.”
- 2) The sequencing of questions about symbolic meaning with the photograph “describe in 3 word/s what comes to mind when looking at the photograph)” and value of place “what are the 3 important features/places do you want to maintain?” had to be reversed. It was easier for respondents to choose important physical elements than finding words to describe feeling or emotions.

Based on the above results, another question such as “why do you need to do the activity?,” was added before asking “what are the benefits you get from the stated activity?” to prepare or prime the respondents' line of thought in explaining the purpose of the activity. The *Tagalog* word “*maiwan*” was changed to “*manatili*” meaning “retain” in English. This made the question more easily understood by the respondents. The sequencing of questions from the purpose of the activity to the reversing of the value of place and symbolic meaning questions

provided a better recollection and uninterrupted response from the respondents.

The morning and afternoon interviews each took 45 minutes. The researcher noticed that the respondents were uneasy due to the long period it took to finish the interview. This is due to some ambiguous questions that had to be explained to the respondents.

The researcher found that morning was not the appropriate time for interviews because most respondents were attending to domestic chores. After lunch or evening interviews were preferred because most of the domestic chores were done and it was considered a more relaxing time before their *siestas* (afternoon naps). Therefore, interviews were scheduled in the afternoons and evenings over a period of three weeks.

## 2.6. Population and Sample Selection

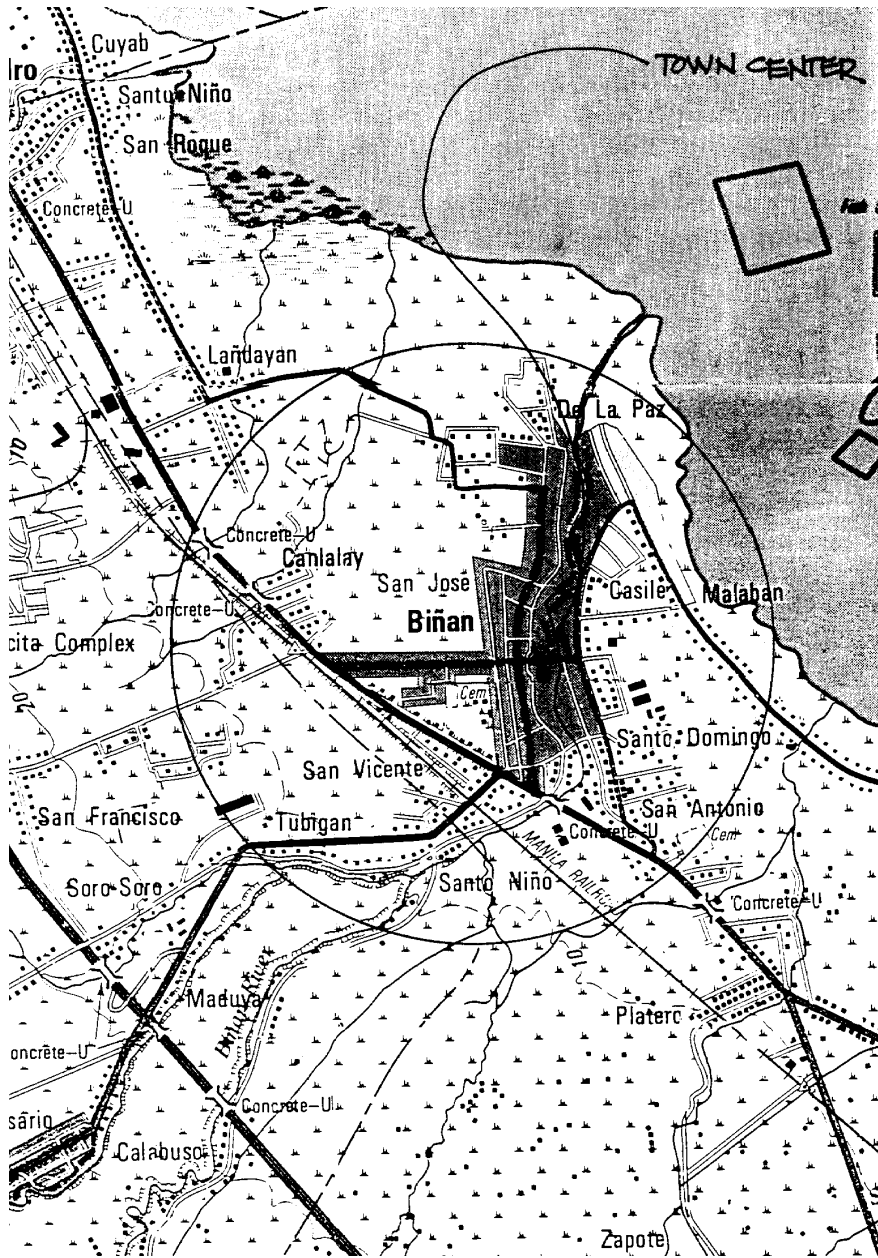
The population identified for the survey resided within a 2-kilometer radius from the town center (see Figure 16). The area covers 8 barrios (*barangays*): a) De La Paz, b) Malaban, c) San Antonio, d) Poblacion, e) San Jose, f) Canlalay, g) San Vicente and h) Platero (see Appendix H). Each district was selected because there is a diversified local economic base, such as manufacturing, agriculture, fishing, and wholesale and retail trade which are sources of employment for different income levels. In addition, Binan, as an urbanizing orbit of Manila, serves as a bedroom community for white-collar workers providing a general mix of educational backgrounds and income levels.

In order to achieve a general representation of the population by income groups, sections of each district were identified based on the following categories: low-income group, middle-income group, and upper-income group. To expedite the identification of these categories of the 8 districts, *barangay captains* of each district were asked to identify specific areas and locations of different income groups. Every *barangay captain's*<sup>3</sup> knowledge and familiarity of his barrio's social groups, educational level, and length of residency were elicited.

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<sup>3</sup> Barangay captains- are elected heads of each barrios who take charge of peace, order and other administrative functions.

This information was located on a street map. Further eyeball inspection of street conditions and house types/condition for each district, which reflected the income level of the sample, was conducted prior to the interview.



Source: Muntinlupa, Philippines 7271 IV. National Mapping and Resource Information Authority. June 1990

Figure 16. The 2-km. Radius Survey Limit from Biñan Town Center

For each designated area of the barrio, the process of house selection started to the left of the intersection of a main road and a minor road or alley of every district. The households for each category were selected at an interval of every five houses. Three households were selected in the low-income group, two in the middle-income group, and two in the upper-income group. More households were selected in the low-income group because an eyeball inspection showed a larger population distribution and density. This method yielded 7 respondents for each barrio totaling 56 respondents for all 8 barrios.

### **Section 3: Data Collection**

#### 3.1 Interview with Residents

After pre-testing, the interviews were conducted with the 58 respondents (households): 80% of the interviews occurred after lunch and in the afternoon while 20 % of the interviews occurred in the evenings. The interview schedule spanned three weeks.

Due to the selected time of the interview there were more female (60%) n=40 than male (40%) n=16 respondents. A total of 56 participants were selected from the eight *barangays*. Once a household was selected, the researcher introduced herself, explained what her study was about, asked if she could take 20 minutes of their time, and asked permission to tape the interview. During the afternoons women were often at home. In order to counterbalance the possibility of a larger female population, evening interviews were done to ensure the presence of males in the household. This effort still yielded a low male population response because they are not home at the time.

When the researcher obtained permission to enter the residence, she again explained thoroughly the extent of the study and started by showing the axonometric drawing of the town center before proceeding to the background questions.

During the interview, the sequence of the revised survey questions and photographs were followed; all responses were tape-recorded. There were certain times that questions had to be framed in another manner in order to be understood. For example, questions for eliciting the meaning of the primary activity (B3 and C3) were made clearer for some respondents when

asked “why is the activity important to you?” Respondents who showed difficulty with the questions generally belonged to the low-income group. It may be due to their unfamiliarity in participating with face-to-face interviews. In addition, these respondents showed concern and discomfort despite the agreement to be recorded on tape. An effort was made to make the respondents comfortable by asking general questions first which sometimes resulted in a longer interview.

There were times when some respondents gave conflicting or irrelevant answers in spite of the careful probing done by the researcher. The repetitive pattern of questions for each place may be the cause of invalid responses.

### 3.2 Site Observation and Behavior Mapping

Site observations and behavioral mapping were done for two consecutive weeks every Thursday, Friday, and Sunday after the interviews were completed. Observations were conducted at different times of the day from 9:00-10:00 am, 1:00- 2:00, and 6:00-7:00 p.m. This was done to determine the different types of use, user type, activities, and merchandise sold in the town center.

The mapping behavior produced a legend showing the highest and lowest pedestrian traffic flow and areas where users congregate for at least 15 minutes. A written documentation of observations of behaviors, type of users, type of activities, and street vendor activities was indicated on the map.

### 3.3 Morphological data

For the morphological evaluation, the 1911 lot plan and tax declarations from the 1940s to 1990s were acquired from the municipal hall. The 1911 lot plan was the first official lot plan for the municipality of Biñan, which showed the lot subdivisions of whole town. Other lot plans after 1911 were not available due to fires at the Municipal hall in the 1970s.

In the absence of plans and other records, tax declarations were used a source of

information because they indicated land use, change of ownership, and lot subdivisions. A tax declaration is a tax assessment of the owner's property for purposes of paying the yearly property tax to the municipality. It showed the lot number, location, owner, lot area, market value of the property, assessed value, and land use. Any changes in the lot number indicate a change of ownership. For example, lot no. 74 in 1979 reflected a division into lot nos. 74-B-1, 74-B-2, 74-B-3 and so forth. A 1985 will indicated a change of ownership from parents to their offspring. When these subdivided lots were inherited, they will show an alphabetical annex (B-1, B-2, and B-3) to the original number of the lot. However, if lot 74 was subdivided and showed a different lot number from the original number it indicates that the property may have been sold to another party. In addition, the tax declaration reflected any change of land use over time.

Other maps, photographs and digitized copies of recent maps were acquired from the National Mapping Agency of the Philippines; they are: a 1954 aerial photograph, a 1970s and 1980s planimetric map, and the most recent 1998 unpublished digitized map of Biñan.

Urban design guidelines for Biñan are nonexistent. The closest information collected is the 1990 Binan Development Plan and a 1983 inception report. The socio-economic profile contains information such as demographics on the social and economic sectors, infrastructure facilities/services, land uses, administrative, fiscal machinery, and tools for implementation. The profile did not show any instructions or guidelines for urban development.

The 1983 inception report is an initial study and includes concepts based on the survey and existing documents of the Municipality of Biñan. It serves as a basis for the initial development plans for large-scale private investments in land development.

Interviews with local government officials revealed that land use planning was not in effect because development happened in a piecemeal manner. Specific guidelines for historic preservation, building mass, building height control, and so forth are non-existent as well. According to government officials, there were no such regulations or guidelines for the town center development. However, a new and more promising study in urban design guidelines for the region including the municipality of Binan, financed by the national government, is nearing



its final stages – the Cavite Laguna Urban Development and Environment Management (CALA) Project. The municipal hall made a draft copy available to the researcher.

#### **Section 4: Method of Analysis**

Data collected from the respondents first clustered separately into closed-ended questions and open-ended questions. The responses for open-ended questions were initially clustered into themes. Thereafter, re-clustering of these themes eventually categorized the responses into positive, negative, and neutral (desires) responses. The frequency of responses for each category was analyzed according to their relevance to each variable such as use or function, built form, value, and symbolic or associational meanings. After clustering, coding of these indicators was determined. The following step was to perform the content analysis that ascribes value and symbolic or associational meaning of function of the built environment.

Similarly closed-ended responses were analyzed through the use of frequency and the averaging of the responses. The results will be compared to the frequency of the closed-ended responses. Finally, to analyze the correlation of each independent variable to the symbolic meaning of each place at the town center, the chi square test was used. The responses collected from key informants were examined and compared with the results of the interview related to place value and development strategy of the CALA project.

The behavioral maps done for two consecutive weeks were layered to identify location of high pedestrian flow, congregation areas, and vendor locations and activity for each specific time. The results were summarized to find commonalties and differences.

The 1954 aerial photographs, planimetric maps from 1970s -1980s, the 1998 digitized maps and the 1999 observed land use map were used to analyze the built context such as building footprints, open spaces, streets, and alleys. The 1911 map and tax declarations were used to analyze lot subdivisions, land use, and ownership which may indicate change of uses over time and relative density of use.