MIGRANT FARMWORKER HOUSING COMPLEX: a cultural response to temporary affordable housing

Alejandra Simonovich de Seufferheld

Thesis Committee
Dr. Lynne Dearborn, Prof. James Anderson, Prof. Carl Lewis
MIGRANT FARMWORKER HOUSING COMPLEX:
A CULTURAL RESPONSE TO TEMPORARY AFFORDABLE HOUSING

BY

ALEJANDRA MARIA SEUFFERHELD

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THESIS

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Dedications

To the memory of my father
To my mother and family
To my husband and daughter
To God
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TABLE OF CONTENTS

LIST OF FIGURES & TABLES

CHAPTER 1 INTRODUCTION

1.1 PROBLEM & SIGNIFICANCE ................................................................. 2
1.2 PROBLEM DEFINITION ................................................................. 5
   1.2.A SOCIAL & CULTURAL FACTORS .......................................... 6
   1.2.B ECONOMIC & POLITICAL .................................................. 7
   1.2.C PHYSICAL FACTORS ........................................................ 8
1.3 RESEARCH QUESTION ............................................................... 8
1.4 THESIS OBJECTIVES ................................................................. 9
1.5 THESIS OVERVIEW ................................................................. 10

CHAPTER 2 LITERATURE REVIEW

INTRODUCTION ................................................................. 13
2.1 HISTORY OF THE MIGRANT FARMWORKER .................................. 14
   2.1.A A CHRONOLOGY OF AGRICULTURAL WORKERS .................. 15
2.2 SOCIAL ENVIRONMENT ............................................................ 19
   2.2.A POPULATION ................................................................. 19
   2.2.B FARMWORKERS IN ILLINOIS ............................................. 23
   2.2.C INCOME ................................................................. 23
2.3 POLITICAL ENVIRONMENT ....................................................... 24
   2.3.A SERVICES ................................................................. 25
   2.3.B RULES AND REGULATIONS IN ILLINOIS ............................. 26
2.4 PHYSICAL ENVIRONMENT ....................................................... 27
CHAPTER 3 MFW HOUSING OVERVIEW & CASE STUDIES

INTRODUCTION ........................................................................................................ 30

3.1 OVERVIEW OF VARIETY OF SOLUTIONS PROPOSED FOR MFW HOUSING ........ 30
3.1.A. MFW LABOR CAMPS .................................................................................. 32
3.1.B. MFW MANUFACTURED HOUSING DESIGN ............................................. 35

3.2 CASE STUDIES ................................................................................................. 38
3.2.A. CASE I - CABRILLO VILLAGE, CA ............................................................. 38
3.2.B. CASE II - NUEVO AMANECER, OR ............................................................ 43
3.2.C. CASE III - LA ESTANCIA, FLA ................................................................. 56
3.2.D. CASE IV - 3RD FLOOR OLD BASE HOSPITAL, IL ................................. 60

3.3 CASE STUDIES ANALYSIS ........................................................................... 66
SUMMARY .............................................................................................................. 69

CHAPTER 4 CHAMPAIGN COUNTY MIGRANT FARMWORKERS & HOUSING

INTRODUCTION ........................................................................................................ 71

4.1 MIGRANT FARMWORKER HOUSING IN CHAMPAIGN COUNTY, ILLINOIS .... 71
4.1.A. MFW HOUSING IN URBANA-CHAMPAIGN .............................................. 72
4.1.B. VARIOUS LOCATIONS IN RANTOUL ....................................................... 73

4.2 2003 SURVEY OF MIGRANT FARMWORKER FAMILIES .............................. 76
4.2.A. MIGRANT WORK LIFE ............................................................................. 77
4.2.B. PERMANENT RESIDENCY vs. ILLINOIS .................................................. 79

4.3 INTERVIEWS .................................................................................................... 88
4.3.A. 2004 OLD HOSPITAL RESIDENTS INTERVIEW .................................... 88
4.3.B. 2005 CREWLEADERS INTERVIEW .......................................................... 91
SUMMARY .............................................................................................................. 94
## CHAPTER 5: CONCEPTUAL DESIGN FUNDAMENTALS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>INTRODUCTION</td>
<td>97</td>
</tr>
<tr>
<td>5.1.A</td>
<td>CULTURE &amp; USE OF THE SPACE</td>
<td>97</td>
</tr>
<tr>
<td>5.1.B</td>
<td>MIGRANT FARMWORKER'S LIFE</td>
<td>97</td>
</tr>
<tr>
<td>5.1.C</td>
<td>CULTURAL CHARACTERISTICS OF THE MIGRANT FARMWORKERS GROUPS</td>
<td>101</td>
</tr>
<tr>
<td>5.1.D</td>
<td>CULTURAL USE OF THE SPACE</td>
<td>102</td>
</tr>
<tr>
<td>5.2</td>
<td>NEIGHBORHOODS</td>
<td>106</td>
</tr>
<tr>
<td>5.2.A</td>
<td>HISPANIC'S CULTURAL HOME-ELEMENTS</td>
<td>107</td>
</tr>
<tr>
<td>5.2.B</td>
<td>PATIO, PERGOLA &amp; GALERIA</td>
<td>107</td>
</tr>
<tr>
<td>5.3</td>
<td>DESIGN EFFICIENCY</td>
<td>110</td>
</tr>
<tr>
<td>5.3.A</td>
<td>PASSIVE SYSTEMS</td>
<td>110</td>
</tr>
<tr>
<td>5.3.B</td>
<td>EFFICIENCY IN BUILDING AND ENERGY USE</td>
<td>115</td>
</tr>
<tr>
<td>5.3.C</td>
<td>ADAPTABILITY</td>
<td>118</td>
</tr>
<tr>
<td>5.4</td>
<td>COMMUNITY &amp; TEMPORARY HOUSING: POSSIBILITIES</td>
<td>120</td>
</tr>
<tr>
<td>5.4.A</td>
<td>COMMUNITY HOUSING NEIGHBORHOODS</td>
<td>120</td>
</tr>
<tr>
<td>5.4.B</td>
<td>ADAPTABLE &amp; MODULAR HOUSING</td>
<td>122</td>
</tr>
</tbody>
</table>

## CHAPTER 6: DESIGN GUIDELINES, PROGRAM & SITE ANALYSIS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>DESIGN GUIDELINES</td>
<td>125</td>
</tr>
<tr>
<td>6.2</td>
<td>PROGRAM OF DESIGN</td>
<td>130</td>
</tr>
<tr>
<td>6.3</td>
<td>PROGRAM PROJECT DESIGN DIAGRAMS</td>
<td>133</td>
</tr>
<tr>
<td>6.4</td>
<td>SITE-ANALYSIS</td>
<td>135</td>
</tr>
<tr>
<td>6.4.A</td>
<td>SITE LOCATION</td>
<td>138</td>
</tr>
<tr>
<td>6.4.B</td>
<td>SITE</td>
<td>140</td>
</tr>
<tr>
<td>Chapter</td>
<td>Title</td>
<td>Pages</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>7</td>
<td>Design Criteria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>143</td>
</tr>
<tr>
<td>7.1</td>
<td>Site Design</td>
<td>144</td>
</tr>
<tr>
<td>7.2</td>
<td>Neighborhoods</td>
<td>145</td>
</tr>
<tr>
<td>7.3</td>
<td>Housing Units</td>
<td>146</td>
</tr>
<tr>
<td>7.3.A</td>
<td>Interior Spaces</td>
<td>148</td>
</tr>
<tr>
<td>7.3.B</td>
<td>Exterior Spaces</td>
<td>149</td>
</tr>
<tr>
<td>7.4</td>
<td>Energy and Efficiency</td>
<td>150</td>
</tr>
<tr>
<td>7.5</td>
<td>Flexibility and Adaptability</td>
<td>152</td>
</tr>
<tr>
<td>8</td>
<td>Proposed Design</td>
<td></td>
</tr>
<tr>
<td>8.1</td>
<td>Site Plan</td>
<td>156</td>
</tr>
<tr>
<td>8.2</td>
<td>Neighborhoods</td>
<td>157</td>
</tr>
<tr>
<td>8.3</td>
<td>Housing Units</td>
<td>161</td>
</tr>
<tr>
<td>8.4</td>
<td>Housing Units Plans</td>
<td>164</td>
</tr>
<tr>
<td>8.4.A</td>
<td>Unit I</td>
<td>169</td>
</tr>
<tr>
<td>8.4.B</td>
<td>Unit II</td>
<td>170</td>
</tr>
<tr>
<td>8.4.C</td>
<td>Unit III</td>
<td>171</td>
</tr>
<tr>
<td>8.4.D</td>
<td>Unit IV</td>
<td>173</td>
</tr>
<tr>
<td>8.5</td>
<td>Details and Pictures</td>
<td>175</td>
</tr>
<tr>
<td>9</td>
<td>Reflections</td>
<td>180</td>
</tr>
<tr>
<td>9.1</td>
<td>Reflections</td>
<td>181</td>
</tr>
<tr>
<td>9.2</td>
<td>Areas for Future Research and Design</td>
<td>183</td>
</tr>
<tr>
<td>9.3</td>
<td>Conclusions</td>
<td>184</td>
</tr>
<tr>
<td></td>
<td>Bibliography</td>
<td>186</td>
</tr>
<tr>
<td></td>
<td>Appendixes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appendix A - Colonia Definitions</td>
<td>193</td>
</tr>
<tr>
<td></td>
<td>Appendix B - Illinois Code 77, Regulations for Labor Camps</td>
<td>197</td>
</tr>
<tr>
<td></td>
<td>Appendix C - Illinois Code 77, Regulations for Manufactured Housing</td>
<td>203</td>
</tr>
<tr>
<td></td>
<td>Appendix D - Questionnaire Survey 2003</td>
<td>209</td>
</tr>
<tr>
<td></td>
<td>Appendix E - Program of Necessities</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Appendix F - Rantoul R-2 &amp; R-3 Zoning Regulations</td>
<td>220</td>
</tr>
</tbody>
</table>
LIST OF FIGURES & TABLES

FIGURES

CHAPTER 2
Figure 2.1. Picture of colonia’s housing
Figure 2.2. Midwest migrant stream of farmworkers. The larger stream migrates from Texas
Figure 2.3. Ethnic and place of birth distribution according to NAWS (1997-1998) Farm worker birthplace

CHAPTER 3
Figure 3.1. Labor camps. Sleeping quarters single roof cabins designs
Figure 3.2. Cabins distributed around common facilities
Figure 3.3. Rental housing with bath, kitchen and 1, 2 or 3 bedrooms
Figure 3.4. Two-Units for family of four in a 60-foot trailer Single men MFW housing facility
Figure 3.5. Rental housing with bath, kitchen and different bedroom arrangements
Figure 3.6. Minimum space & arrangement for a family of four: Cooking, eating and sleeping
Figure 3.7. Unit for a family of four or five, with cooking, eating, sleeping and toilette facilities
Figure 3.8. Portable plywood sleeping unit with horizontal fiber-glass window
Figure 3.9. Nyssa Labor Camp. Temporary tents units
Figure 3.10. Nyssa Labor Camp. View of the units and play area
Figure 3.11. View of the central dinning and kitchen area
Figure 3.12. Nyssa Labor camp. Aerial view
Figure 3.13. Prototype manufactured housing unit that will help to fill this need for on-farm housing. San Joaquin County, CA
Figure 3.14. Farm Worker Housing Site plan. UC Davis
Figure 3.15. View of the unit bedroom and bathroom, porch and kitchen
Figure 3.16. Model of a unit and common
Figure 3.17. MFW unit. Picture of front view, showing the front and side porches

Figure 3.18. MFW unit. Floor plan. Central kitchen, bathroom and porch areas divide semi-private and private areas

Figure 3.19. Picture of MFW & emergency unit

Figure 3.20. Cabrillo Village. 1977 Single-family units. (Mutlow, 1987)

Figure 3.21. Cabrillo Village Site organization

Figure 3.22. Quadruple one floor units with a central private courtyard. The design used passive solar system to save energy

Figure 3.23. Cabrillo Village site plan

Figure 3.24. Scheme private row units and porches

Figure 3.25. Unit main entrance. Volumetric design defines a porch and provides shade.

Figure 3.26. Cabrillo Village. Row units' front view

Figure 3.27. Cabrillo Village. Community center, exterior view of the community center

Figure 3.28. Cabrillo Village. Community center. Interior of the community center. Open floor plan provides a flexible use of the space for different social, educational and recreational activities (Mutlow, J., 1994)

Figure 3.29. Cabrillo Village. Community center. Patio

Figure 3.30. Nuevo Amanecer. Path along units that connects the entire community

Figure 3.31. Nuevo Amanecer. Site scheme

Figure 3.32. Nuevo Amanecer. Site plan

Figure 3.33. Nuevo Amanecer. Picture of cluster B dining room

Figure 3.34. Nuevo Amanecer. Picture of cluster B open ceiling, kitchen & dining areas

Figure 3.35. Nuevo Amanecer. Cluster A - Second Floor Plan

Figure 3.36. Nuevo Amanecer. Cluster Type A - First Second Floor Plan

Figure 3.37. Nuevo Amanecer. Cluster Type B - Second Floor Plan

Figure 3.38. Nuevo Amanecer. Cluster B scheme. Private units with semiprivate porches and patio

Figure 3.39. Nuevo Amanecer. Cluster Type B - First Floor Plan

Figure 3.40. Nuevo Amanecer. Cluster Type C - Second Floor Plan
Figure 3.41. Nuevo Amanecer. Cluster Type C - First Floor Plan
Figure 3.42. Nuevo Amanecer. Cluster Type D
Figure 3.43. Back Elevation Cluster A
Figure 3.44. Nuevo Amanecer. Front Elevation Cluster A
Figure 3.45. Nuevo Amanecer. Perspective cluster A showing front entrances
Figure 3.46. Nuevo Amanecer. View of cluster Type B entrance showing semi-private patio and porch
Figure 3.47. Nuevo Amanecer. Migrant Head Start children
Figure 3.48. Nuevo Amanecer. View of the play areas
Figure 3.49. View of the laundry/meeting area (central building) and plaza, that can be reached from the Community center-day care Plaza. A central open space (divided by the street) integrates the residential and community areas and connects both plazas
Figure 3.50. Plazas Floor Plan. Public Spaces. Plan of Educational Multipurpose & Head Start Plaza, & Laundry-Meeting Plaza
Figure 3.51. Nuevo Amanecer. Activities at Cipriano Ferrel multipurpose Center Roberson
Figure 3.52. Nuevo Amanecer. Activities at Cipriano Ferrel multipurpose Center
Figure 3.53. La Estancia. Aerial views of the housing complex
Figure 3.54. La Estancia site plan scheme
Figure 3.55. La Estancia Site Plan. Four-unit blocks, community center and day care in the center. The open common spaces are the community center and the soccer field
Figure 3.56. La Estancia. Four-units floor plan scheme
Figure 3.57. La Estancia. Four-units floor plan
Figure 3.58. La Estancia. Aerial view of a four-houses unit and the Community center
Figure 3.59. La Estancia. Community Center facades
Figure 3.60. Rantoul. Old Air force Base Hospital. Chanute air force hospital. Aerial view
Figure 3.61. Chanute hospital. Southwest entrance view. Each floor is occupied by a different MFW group during the agricultural season
Figure 3.62. Chanute hospital floor plan. Each floor and wind is rented to a different agricultural company. In the first floor central hall people interact between groups.

Figure 3.63. Chanute old hospital South entrance. View of the South and West winds.

Figure 3.64. Chanute old hospital. Hallway, used as a “common family room”.

Figure 3.65. Chanute old hospital. West side entrance. Picnic tables are located under the trees.

Figure 3.66. Chanute old hospital. Third floor neighborhood scheme shows the areas. Private-unit family area (bedrooms) in yellow, social areas (halls) in blue, kitchen (nurse stations) in orange and common bathrooms.

Figure 3.67. Nurse stations area, used as a kitchen.

Figure 3.68. Nurse station, is used as a kitchen.

Figure 3.69. Open room next to the hall. 3rd Floor, used as a kitchen, dining and social interaction area.

Figure 3.70. Third floor hospital, central hall. Residents use this room as a “large family room”.

Figure 3.71. Third floor hospital, educational program from IL Migrant Council.

Figure 3.72. Third floor hospital. Outdoor meeting, close to the West entrance.

CHAPTER 4

Figure 4.1. Urbana UIUC Campus Apartments Complex. Locate 1, 2 or 3 Families per unit.

Figure 4.2. CHAMPAIGN. Urban Ministries Restoration Building Locate 1 family per room.

Figure 4.3. 2004 Doolittle St. Apartment Complex. Locate 1, 2 or 3 families/apt.

Figure 4.4. Doolittle St. Apartments. The front yard, the green area between the sidewalk and building is used as a social interaction area.

Figure 4.5. Bennett Trailer Park. Each trailer locate 1, 2 or 3 families.

Figure 4.6. Manufactured houses Youngstown Trailer Park. Each trailer locate 1, 2 or 3 families.

Figure 4.7. Manufactured houses A. Youngstown Trailer Park. Each trailer locate 1, 2 or 3 families.

Figure 4.8. (2003). Survey. Months of the year where families migrate to Champaign county.

Figure 4.9. (2003). Survey. Months of the year where families migrate to Champaign county.

Figure 4.10. (2003). Survey. Resources of migrant families for contact a crew-leader.

Figure 4.11. (2003). Survey. 2003 annual income.
Figure 4.12. (2003). Survey. Housing unit type, physical condition
Figure 4.13. (2003). Survey. Areas of the house that need improvement
Figure 4.14. (2003). Survey. Adults per household
Figure 4.15. (2003). Survey. Children per household
Figure 4.16. (2003). Survey. House Vs. Home
Figure 4.17. (2003). Survey. Family interaction in the living places
Figure 4.18. (2003). Survey. Neighbors interaction. Do you feel safety?
Figure 4.19. (2003). Survey. Ethnic composition in the neighborhood
Figure 4.20. (2003). Survey. Play ground
Figure 4.21. (2003). Survey. Community Center
Figure 4.22. (2003). Survey. Nearby Services
Figure 4.23. Chanute old Hospital. Third floor resident. MFW women interview in the kitchen area. The kitchen is shared by three families

CHAPTER 5
Figure 5.1. Kitchen & dining "users" zones of the "heart of the home". The area next to the kitchen, is the "woman kingdom", The rest of the family use the other side of the table.
Figure 5.2. MFW bathroom need to have a efficient use, that more than one person can use it at the same time
Figure 5.3. Central patio in a rural house
Figure 5.4. Galeria in a rural house in Colombia
Figure 5.5. Patio with pergola and planters
Figure 5.6. House with galeria, porch, and patio
Figure 5.7. Low-income house “galeria” Figure 5.4.b
Figure 5.8. Galeria in a rural house in Spain
Figure 5.9. Luxurious “galeria” in Spain
Figure 5.10. Rural house in Colombia, with galeria, patio
Figure 5.11. Thermal comfort. Interaction between buildings and occupants
Figure 5.12. Sun Exposure
Figure 5.13. Direct Gain sun from South glazing
Figure 5.14. Sun angle in winter and summer
Figure 5.15. Winter & summer sun movement
Figure 5.16. Cross ventilation scheme
Figure 5.17. Stack ventilation scheme
Figure 5.18. Advance Wall Framing modulation
Figure 5.19. Advance Wall Framing. Line up joist and roof rafters
Figure 5.20. Advance Wall Framing structure.
Figure 5.21. Location of wet functions. (a) Within activity zones, (b) between activity zones. When are between zones, facilitates adaptability
Figure 5.22. Berkley Cohousing. Units entrances are facing common open areas
Figure 5.23. CoHousing common room
Figure 5.24. CoHousing diagram. Housing units share common open areas, and a common house
Figure 5.25. MFW Housing diagram. Neighborhoods with housing units and open spaces, share community open areas, and a community center
Figure 5.26. Modular Multiple dwelling
Figure 5.27. Container Home Kit

CHAPTER 6
Table 6.1. Services for Migrant farmworkers
Figure 6.1. MFW Housing complex diagram
Figure 6.2. Crewleader’s neighborhood diagram
Figure 6.3. Map of Illinois, showing in red Champaign county, located in central East IL
Figure 6.4. MFWs places of work, housing and site options in the area of Champaign County
Figure 6.5 Aerial View Village of Rantoul
Figure 6.6. Village of Rantoul Proposed zoning plan. A white circle shows, the thesis site’s area, residential R2 & R3 zone
Figure 6.7. PROPOSED SITE. The site is on the South of a future residential R3 area, The school on the North side is at a walking distance. On the West side will be a commercial area. A park is designed connecting these both areas.
Figure 6.8. Site dimensions. Arial view
Figure 6.9. Site view number 1- View from farther North
Figure 6.10. Site view number 2 – view from Murray Rd & Cr 299, North-West corner
Figure 6.11. Site view number 3. View from the West side, on CR 299

CHAPTER 7
Figure 7.1. Two major areas: public and residential. Areas accesses from different street
Figure 7.2. Components of each area. Public: community center, daycare and sports, Residential: four neighborhoods
Figure 7.3. Relationship between areas. Interior pedestrian circulation connects the fourth neighborhoods between each other and with the public area
Figure 7.4. Circulation paths connecting areas and central patios-plazas
Figure 7.5. Neighborhood scheme. Central courtyard with areas for different activities
Figure 7.6. Core modules scheme. Zoning & circulations
Figure 7.7. Bathroom zoning divided in the three main activities
Figure 7.8. Cross ventilation through the N-S windows
Figure 7.9. Sleeping module ventilation
Figure 7.10. Living module cross and stack ventilation
Figure 7.11. Living module. Relationship between public, semipublic, private and semiprivate areas
Figure 7.12. Sleeping module. The module can be divided with panels
Figure 7.13. Sliding panels. Used to divide bedrooms. Central panel. Two sliding panels that can move in either direction to enter the bedroom
Figure 7.14. Folding panels. Used for storage area. The panels can be stored without consuming space. The unfolded panel is 4’ x 8’, with a central part of 4’x8’ and the folding sides of 2’ x 8’

Figure 7.15. Wall-furniture. The wall shape creates the space for benches

CHAPTER 8

Figure 8.1. Site plan organization
Figure 8.2. Site plan scheme of open public and community areas. Public plazas area in orange. Residential courtyards or patios are in green. Each neighborhood is like a Family-home, with a central patio
Figure 8.3. MFW Complex Site Plan
Figure 8.4. Neighborhood Picture
Figure 8.5. Neighborhood central patio picture, showing the cover common central patio with pergola
Figure 8.6. Neighborhood different scale open areas, for do different activities
Figure 8.7. Reveals the relation of the space between the housing units to entrances, pergolas, sidewalks and landscape
Figure 8.8. Neighborhood Site plan
Figure 8.9. La Espiga model view
Figure 8.10. La Espiga central courtyard
Figure 8.11. Unit II, showing the “living” & “sleeping” modules. The plan shows in red the sliding panels, and in yellow the space created by the folding panels
Figure 8.12. Living module
Figure 8.13. Sleeping module adaptability. Different bedroom arrangements using the sliding (red) and folding panels
Figure 8.14. Interior view of the living module
Figure 8.15. Unit I Floor Plan. Option A - Two 3-bdrm unit
Figure 8.16. Unit I Section
Figure 8.17. Unit I front view
Figure 8.18. Cross section. Living module
Figure 8.19. Unit I back patio view
Figure 8.20. Unit I Floor Plan. Option B - One 3/4bdrm unit & One 2-bdrm unit
Figure 8.21. Unit I Front Elevation
Figure 8.21. Unit Floor Plan - One 3 bdrm unit & one 1-bdrm unit
Figure 8.23. Unit II section
Figure 8.24. Unit II patios view
Figure 8.25. Unit II option B. Two 2 Bdrm units
Figure 8.26. Unit II unit front view
Figure 8.27. Unit II. Front elevation
Figure 8.28. Unit II. Back elevation
Figure 8.29. Unit III floor plan. Unit III A is designed for larger number of residents
Figure 8.30. Unit III front elevation
Figure 8.31. Unit III Front galleria and porch view,
Figure 8.32. Unit III B floor plan. Two bedrooms & one large bedroom
Figure 8.33. Unit III front elevation
Figure 8.34. Unit III Back courtyard view, showing the storage room, and semiprivate patio
Figure 8.35. Unit IV. Second Floor
Figure 8.36. Unit IV. First Floor
Figure 8.37. Unit IV. Section
Figure 8.38. Unit IV. Front elevation
Figure 8.39. Unit IV. Volumetric view
Figure 8.40. Unit II. Roof plan
Figure 8.41. Detail rafter roof
Figure 8.42. Living module cross section
Figure 8.43. Wall section
Figure 8.44. Model of a neighborhood picture
Figure 8.45. Model Unit II
Figure 8.46. Interior of a courtyard, shows an area for small scale activities
Figure 8.47. Unit I. Side view
Figure 8.48. View of a pergola, in the back patio
Figure 8.49. Interior view of the living module

**LIST OF TABLES**

Table 3.1. Cases Analysis. Socio-cultural. Summary of ethnicity, culture, activities, family & household composition of residents
Table 3.2. Cases Analysis. Political. Summary of job situation, income & services provided to residents
Table 3.3. Cases Analysis. Physical environment. Summary of physical conditions of facilities, design and how these facilities respond to the needs of users
Table 3.4. Interview analysis
Table 4.1. Crewleaders lifestyle
Table 4.2. Crewleaders's group of workers
Table 5.1. The importance of exterior spaces in the everyday life as part of the culture.
CHAPTER 1
INTRODUCTION

1.1 PROBLEM & SIGNIFICANCE ........................................................................................................................................... 2

1.2 PROBLEM DEFINITION .................................................................................................................................................. 5

   1.2.A SOCIAL & CULTURAL FACTORS ............................................................................................................................ 6

   1.2.B ECONOMIC & POLITICAL .................................................................................................................................... 7

   1.2.C PHYSICAL FACTORS .............................................................................................................................................. 8

1.3 RESEARCH QUESTION ....................................................................................................................................................... 8

1.4 THESIS OBJECTIVES ....................................................................................................................................................... 9

1.5 THESIS OVERVIEW .......................................................................................................................................................... 10
1.1. PROBLEM & SIGNIFICANCE

Housing is a “mirror of ourselves” (Marcus, 1995). Housing is also one of the most fundamental necessities. A decent home is a right that every human being has. In this regard, the possibility of having a decent home is at the heart of the “American Dream”. Decent housing is essential for individuals and their families to fully develop their human potentials, and in this manner create a healthier and more humane society. Not until the late 70’s, was the concept of providing a housing environment that promotes the individual’s sense of identity and belonging, security, and privacy applied to low-income housing (MacDonald, 1996). Unfortunately, in contemporary society, several population groups are still affected by a lack of or limited access to dignified housing; among them are migrant farmworkers (MFW).

Every year, a large number of people move around the country, according to the agricultural seasons, looking for jobs to support their family. These workers help provide fresh foods to the entire nation. These people are migrant and seasonal farmworkers. MFW may travel either unaccompanied or with their families. Under both circumstances, they must cope with a lack of adequate housing and basic necessities. It is not uncommon for migrant farmworkers to perform very difficult manual labor, travel many hours to their work places, and have extended work schedules usually under harsh weather conditions. After a long day of hard work they return to their “camp” or housing place. Adequate and affordable housing is of great significance to any migrant farmworker. Accounts of migrant camps describe third world housing conditions including shacks, overcrowding, and poor sanitary conditions. In some cases, migrants have no housing at all and are forced to share a dwelling between two or more families as a result of their low income (Housing Assistance Council, 1997). MFW during short-term harvest seasons need decent affordable and furnished temporary housing (Holden, 2001). Because many families depend entirely on the income
generated through migrant jobs in order to survive through the year, they prefer doubling or tripling up to save money on rent.

Due to transitory work conditions and low-income status, these families do not have many housing options. In addition, codes regulating housing and sanitation are unevenly enforced, and construction of new housing for migrants often meets local resistance.

Migrant farmworker families experience harsh conditions in different areas of their lives, including a lack of adequate food, housing, health care, marketable employment skills, occupational hazards and job insecurity. Under these circumstances, many migrant families turn to family and community support to compensate for these adverse conditions. Migrant families represent a very homogeneous ethnic group, almost all of whom are Mexican immigrants or second generation Mexican-Americans. They maintain their traditions and roots, including family relationships, food, music, social life, language, and religion. They have strong family ties; interaction among family members is very important. It is common for these families to live together or near extended family members. The majority of the MFWs travel to work with a crewleader, who is the nexus between the worker and the agricultural company. Crewleaders are employed by the companies to recruit the majority of workers hired. Crewleaders often act as the negotiators between farmers seeking employees and migrant farmworker communities. In the case of central Illinois, five large seed companies hire most of the migrant farmworkers. The majority of migrant farmworkers are hired by the same crewleader year after year. The MFWs reside during the winter in their “home base”. Home base places in the USA are located in Florida, Texas, and California (Holden, 2001). The patterns of migration to the North are the migrant stems. There are three migrant stems, Eastern migrates from Florida to New England, Midwestern migrates from Texas to the Great Lakes and Northern Plains states, and Western moves from California to the Pacific Northwest (Holden).
Throughout the literature reviewed, the importance of improving housing conditions for migrant workers is a constant theme. Even though state legislatures have passed laws and regulations to improve housing and health conditions, decent and affordable housing for farmworkers continues to be a pressing need. These same statements, stressing the need to improve migrant housing, are found in resources from the last forty years. It appears as if “the clock” is frozen in time. At the hearings of the Migrant and Seasonal Farmworker Housing in the United States, Margolis noted that “an entire generation of Americans has succeeded in doing nothing to solve the migrant housing problem, while secure in the illusion that much is being done” (1981, p.51)

In order to understand the factors that contribute to the lack of affordable housing for migrant farmworkers, it is necessary to know the social, political and housing situations of this particular group of workers. Consequently, the main purpose of the research highlighted in this document is focused on better understanding the issues that impact housing availability for migrant farmworkers, and increasing knowledge about migrant farmworkers’ living environments. With firm background knowledge, the ultimate goal of this thesis is to develop guidelines and prototype units that can be used to improve the quality of housing environments for the population of migrant workers in central Illinois.

According to architect Bryan Bell, housing for farmworkers is not an easy problem to solve (Bell, 2004). Housing for seasonal workers is simpler than housing for migrant workers. Within the category of migrant farmworker, housing for single men is less difficult than providing housing for migrant farmworker families (Bell, personal communication, April 2005).
1.2 PROBLEM DEFINITION

Farmworker housing requires a two-pronged approach: temporary housing for Migrant farmworkers, and permanent housing for seasonal farmworkers. However, whether for migrant or seasonal farmworker, there is a shortage of decent and affordable housing. This problem has persisted throughout the years as it has for all low-income groups in society. This research uses the Department for Communities and Local Government of the UK definition of descent housing as a house that meets the current statutory minimum standard for housing, is in a reasonable state of repair, has reasonable state of repair, modern facilities and services and provides a reasonable degree of thermal comfort (Communities and Local Government, 2006).

According to Wright (Wright, 1981), groups of low-income people have been classified as deserving poor (people with steady and moderate income) and as the poorest low-income. The Migrant farmworkers population is, and has been one of the lowest-income groups in the nation. The housing problems for this group have not improved throughout the years, but rather worsened. Migrant workers currently receive several types of aid in the form of programs that provide food, clothing, education and health assistance but no programs are available to assist them with housing. The majority of this low-income group also has a low level of education, which prevents them from having access to better paying jobs and housing. Migrant farmworkers are often segregated because of their education, low income, cultural difference, and language. Thus, the housing problems associated with Migrant farmworkers’ housing are not easy to resolve, because they are the result of a combination of social, cultural, economic, political, and physical factors. In addition, there are conflicting points of view among the different players involved with this housing problem including migrant farmworkers, crop growers, government, and society.
1.2. A SOCIAL & CULTURAL FACTORS

The conceptualization and use of private and public spaces is different between cultures. More than eighty-five percent of migrant farmworkers are from a Hispanic cultural background (Housing Assistance Council, 2000) In the Hispanic culture, the boundary of private space is mostly restricted to the bedroom area of the dwelling. The rest of the house is considered as a public space and is open to all family, friends, and visitors.

Within the Hispanic culture it is very important to invite newcomers to the house and invite them to use it openly. For this culture, entertaining visitors means integrating them into the house. It is very common to observe more individuals living together in the same dwelling. In addition, the Hispanic culture allows a higher degree of overlapping between private and public areas.

For the growers, the social issues are generally limited to trying to accommodate the workers and their families, including children. In general, in a dwelling that accommodates migrant farmworker families there is an average of three members of a family who are farmworkers. Meanwhile in a house that accommodates only men, there is an average of eight workers per unit. This means, that growers will need many units for families, plus services to cover their other needs.

This thesis research and resultant design are focused on these last two groups of workers: families with children of different ages, and single men. These groups migrate every year to work in the fields in Central Illinois, in Champaign County, for a period of time between three weeks and four months from July to October.
1.2.B ECONOMIC & POLITICAL

From the point of view of the MFW, their work represents the main source of family income. Thus, for these workers it is vital to have a job. Housing is considered a secondary concern. They are very thankful when the agricultural company pays the rent, at least during a part of the agricultural season. When the migrant farmworkers are responsible for their own housing costs, they prefer to be crowded in the housing, but with the opportunity to save money.

Many farmers no longer offer housing to migrants because they can obtain workers without offering it. In addition, providing housing to MFW simply exposes farmers to fines and liability. According to the Illinois Migrant Council Housing Coordinator, there are 50 migrant camps in Illinois. In 2001, twenty-one of the camps were inspected, and nineteen were found to be without proper license (personal communication, Juliana Gonzalez-Crussi, 2005). On the other hand, many growers prefer to have housing provided from an outside source, rather than provide it directly through the company. This is because providing housing means diverting economic and human resources from the main business focus of the company (personal communication, James Harper, 2004). In addition, government regulates labor camps, and inspects camps each year. To avoid fines under these strict regulations, many growers have decided not to providing housing directly.

In the 1930s the federal government provided funding for MFW’s housing (Wright, 1981). At the present, there are no specific federal or government programs for MFW housing. However, through loans, federal programs administrated by U.S Department of Agriculture (USDA’s) and Rural Housing service (RHS), part of the cost of migrant farmworkers housing can be subsidized (Holden, 2001; Housing Assistance Council, 1997).
1.2.C PHYSICAL FACTORS

The main physical problems apparent in MFW housing include, crowding and substandard housing conditions (Holden, 2001; Housing Assistance Council, 1997). Many people note there is a lack of space for the families; often, MFW housing provides only one room per family. In many cases, MFW housing is provided without a private bathroom or a kitchen (Conklin, 1966).

1.3 RESEARCH QUESTION

There has long been a shortage of decent housing for the low-income part of society in the United States, and currently the shortage is getting worse. This is particularly true for the most vulnerable groups of society that have low to very-low incomes. Among this population, the families of MFWs are specially affected because of their socio-economic characteristics. They are one of the lowest-income groups in the nation whose yearly needs for short-term housing fluctuate with population size and composition. Additionally, there is a biased perception that the MFW contribute little culturally and economically in the United States. These factors create particularly challenging conditions for the design of short-term housing for different-sized families; which successfully incorporates the elements of cost efficiency, affordability, adaptability, and culturally sensible design.

The question addressed by this research is: what is the best way to provide short-term housing for a specific population, who will use it every year while making it adaptable, economical, and durable?
1.4 THESIS OBJECTIVES

The lack of easily accessible demographic, economic and work conditions information on migrant farmworkers is a barrier for many organizations, agencies, and municipalities attempting to address issues facing farmworker communities. The lack of adequate housing ranks among the most urgent issues of concern when addressing improved quality of life for MFW. Despite well-documented conditions of overcrowding and structural deterioration of dwellings, little has been done to ameliorate housing conditions of migrant farmworkers. Consequently, the objectives of this research are:

1) To acquire a better understanding of how to design a sustainable housing complex for migrant farmworkers. In this research, sustainable primarily refers to durability, adaptability, affordability, and efficiency (Belgian Housing Focal Point, 2002).

- Durability is dependent on the quality of the building materials used.
- Adaptability refers to the needs of the occupiers during the time that both the present and future occupiers are staying in the unit.
- Affordability refers to minimizing the first cost of the building construction, as well as long-term expenses of the building for residents.
- Rational and efficient use of energy resources and construction materials is also an important part in sustainability.
2) To design housing for Migrant Farmworkers that not only responds to socio-economic factors, but that also addresses matters of aesthetics, quality, and culture.

1.5 THESIS OVERVIEW

The following steps were applied to study and analyze the MFW Housing situation:

1. Review of literature including, the history of MFW, and MFW living environments, as well as the social, political, and physical aspects of these environments.

2. Data collection, applying historic, qualitative and case study research strategies.

This section of the thesis provides a history of different design approaches used in several MFW housing complexes. Four cases of MFW Housing are studied and analyzed. The first case is “Cabrillo Village,” a farm worker housing complex located in California. The second is “Nuevo Amanecer,” in Oregon, the third one “La Estancia” located in Florida, and the fourth case is a former Air Force Base’s hospital in Rantoul, IL that is now used as a MFW housing facility.

The strategies used to gather information to analyze the cases presented in this thesis include telephone and personal interviews, and analysis of literature and Internet sources.

3. Analysis of survey and interview data including an examination of a qualitative survey conducted with 33 MFW families during the season of 2003. In addition, two crewleaders (hiring person and liaison between the seed companies and MFWs) were
interviewed during the 2005 season. The analysis of the cases, interviews and survey responses provide information about
necessities required by MFW when they migrate to work in the fields.

4. Enumeration of critical design criteria including, cultural housing elements and the use of the space, influence of climate
on design, construction efficiency and adaptability.

5. Proposal of Design Guidelines: These guidelines result from the data analysis process while, keeping in mind the people
who will inhabit the complex, their culture, lifestyle and necessities. The guidelines are classified according to culture and lifestyle;
migrant farmworker groups; housing units; community areas, and facilities; personalization; play areas; open spaces; accessibility;
security and building materials.

6. Inventory of the different places where the MFW live and work in Champaign County.

7. Analysis of site for a prototypical MFW housing complex.

8. Development of Program for the MFW housing complex based upon analysis and guidelines (5-7 above)

9. Presentation of a proposed design solution for MFW housing in Champaign County.

10. Reflection on proposed solution

11. Conclusions. Implementation of suggestions to improve housing conditions for MFW in Champaign County.
CHAPTER 2

LITERATURE REVIEW

INTRODUCTION .........................................................................................................................................13

2.1. HISTORY OF THE MIGRANT FARMWORKER ................................................................................14

2.1.A A CHRONOLOGY OF AGRICULTURAL WORKERS ........................................................................15

2.2. SOCIAL ENVIRONMENT .............................................................................................................. 19

2.2.A. POPULATION ............................................................................................................................. 19

2.2.B FARMWORKERS IN ILLINOIS .................................................................................................... 23

2.2.C. INCOME ...................................................................................................................................... 23

2.3. POLITICAL ENVIRONMENT ......................................................................................................... 24

2.3.A. SERVICES ................................................................................................................................... 25

2.3.B RULES AND REGULATIONS IN ILLINOIS .............................................................................. 26

2.4. PHYSICAL ENVIRONMENT .......................................................................................................... 27
“The food that overflows our market shelves and fills our tables is harvested by men, women, and children who often cannot satisfy their own hunger.”
Cesar Chavez (1927-1993)

**INTRODUCTION**

The search for Migrant Farmworker Housing literature was conducted using several databases, and internet search engines using key words such as migrant - seasonal - farm worker- farmworker- housing - regulations - colonia - farmworker camp- Migrant farmworker housing design - labor history- labor law. Then, the results were organized under the areas of social and physical environments relevant to housing for migrant farmworkers in the United States.

Throughout the literature review it can be observed that all the reference materials analyzed have a convergent statement in which the importance of improving the farm housing condition for migrant workers is fully recognized. Even though state legislatures have been passing laws and regulations to improve housing and health conditions, decent and affordable housing for farmworkers continues to be a pressing need. The same statements are found in resources dating 40 years in the past and up to the present time. At the Hearings of the Migrant and Seasonal Farmworker housing in the United States, Margolis (Margolis, 1981) expressed that an entire generation of Americans has succeeded in doing nothing to solve the migrant housing problem, while secure in the illusion that much is being done. In order to better understand the factors that contribute to the lack of affordable housing for migrant farmworkers it is necessary to know the social, political and housing situations of this particular group of workers.
In a New York Times article, Steven Greenhouse (Greenhouse, 1998) stated, “three decades after Cesar Chavez made the shocking conditions of migrant workers a national cause, more farm workers than ever are living in squalor.” The same author explains that some of the reasons for this situation are that the government has not paid attention to the large number of migrant farmworkers, “The federal Commission on Agricultural Workers estimates there are 2.5 million farm workers, up from 1.8 million in 1960. About 800,000 of the current workers lack adequate shelter, according to the Housing Assistance Council (HAC), a non-profit Washington-based consulting group that studies rural housing.” The National Center for Farmworker Health (NCFH, 2002) reported that lack of sanitary facilities in the fields and safe water for drinking and bathing are common deficiencies found all over the U.S. The Federal Commission of Agricultural Workers suggested that at the moment, it is much more difficult for the government to “improve the living conditions of the workers”. This means providing housing or forcing the employers to provide better housing for the workers. This situation also can be inferred from the hearings before the committee on workforce protection in 1999 (Hearings, 1999).

2.1. HISTORY OF THE MIGRANT FARMWORKER

2.1A  A CHRONOLOGY OF AGRICULTURAL WORKERS

In order to understand the current situation of MFW, it is necessary to take an historic perspective. Since the majority of the migrant labor force is foreign-born, especially from Mexico (Mines, 1997) or of Mexican descent, Mexican history, and U.S./Mexico relations, and politics in both countries are factors that have had a significant impact on the events that shape the unique characteristics and circumstances of these agricultural workers in the United States today.
After Mexico’s independence from Spain in 1821, many U.S. Anglo settlers came to Texas. There were many misunderstandings between the Anglo settlers and the Mexicans. There was a general belief among Mexicans that the United States government was using colonists in Texas to generate disturbances in order to annex the territory either through purchase or revolution. In the fall of 1835, after several military incidents, Texas became independent. Mexico continued to claim Texas despite the establishment of the independent republic of Texas. Consequently, the Mexican/American War began along the southern border of Texas on Apr. 25, 1846, and the U.S. occupation of Mexico City on Sept. 14, 1847 ended this conflict. As a result of these events, Mexico lost California, New Mexico and Texas (PBS).

By 1900, there were between 380,000 and 560,000 Mexican-Americans living in the U.S. In addition, many hard-working Mexican peasants, and highly skilled agricultural laborers came to the U.S. as a result of the Mexican Revolution in 1910, and the series of Mexican civil wars that followed. These difficult moments in Mexico’s history caused severe poverty as well as other social and political disruptions. The Mexican government failed to provide its people with the resources needed to improve their lives. During these troubled times, farm owners recruited Mexicans and Mexican Americans because these desperate workers would tolerate worse living conditions and a significantly lower salary than American workers (PBS).

In 1917 The United States entered World War I, which caused a shortage of labor. Agencies in Mexico recruited railroad and agricultural workers to work for U.S. companies. By the 1920s, at least three quarters of California's 200,000 farm workers were Mexican or Mexican American. Since there was a rapid shift of Mexico’s working population, the United States and Mexico made their first labor agreement. In the agreement, Mexico required that the U.S. farm owners provide legal contracts for all Mexican workers that guarantee conditions such as reasonable wages and work schedules. The U.S. government enforced the
border between the United States and Mexico, to be able to check that all Mexican immigrants had the proper work contract so they would not be exploited.

During the 1930’s there were approximately 600,000 Mexicans living and working in the U.S. As a consequence of the great depression, Mexicans and Mexican-Americans became targets of discrimination. White trade unions complained that Mexican immigrants were taking jobs that should go to white men. This tense situation caused many demonstrations. Established Mexican and Mexican-American farm workers organized strikes to protest against low wages and worsening living conditions.

In 1935, the National Labor Relations Act (NLRA) gave all workers, except farmworkers, the right to organize, strike, and bargain collectively with their employers. During the 1930’s, agriculture in the United States was crippled because of the devastating “Dust Bowl” drought in the Midwest. California was almost untouched by the drought. As a result, the farm owners had a chance to greatly profit from cheap Mexican labor.

Finally, by 1939 white farm owners convinced California’s government to put “The Repatriation Program” in effect. This program deported around 500,000 people of Mexican descent, including many Mexican-American citizens. Because of so many people being deported, the number of farmworkers dropped. Farmers suffered greatly during this time because they were asked to contribute more to the effort to fight WWII successfully by increasing production.

In 1942 the United States government signed a labor agreement with Mexico that allowed male citizens to work as farm laborers throughout the U.S. It was called the Braceros Program (PBS). Between 1942 and 1964, almost 5 million Mexican laborers worked in the U.S. under the Braceros Program. As part of this program a Public Law, 78, was passed, which allowed growers to hire braceros (guest workers) to make up for what growers called a “manpower emergency” after making “reasonable efforts” to hire American workers. Thousands of Mexicans went to the U.S. to work for less than minimum wage, without benefits and under
terrible working conditions. By the 1960’s, an excess of “illegal” agricultural workers and mechanization ruined the practicality of the bracero program. This is why the U.S. ended the program in 1964.

In 1962, as the program was becoming less popular, César Chávez and Dolores Huerta established the United Farm Workers Union in California (Ferriss, 1997; Tejada-Flores, 2004). With the leadership of Cesar Chavez, a Mexican-American migrant farmworker, the United Farm Workers Union was able to negotiate important improvements in wages and working conditions. In 1962, the Migrant Health Act was passed in a plan to reduce Mexican immigration, regulate farm labor contractors, and try to stop child labor without confronting the agribusiness sector. Two years later the migrant education and Migrant Head Start programs started to fight poverty among migrant farmworkers. These programs today are the backbone of migrant health and educational policy in U.S.

Since the end of the 1960’s, others laws such as the Agricultural Labor Relations Act passed by the State of California in 1975 have been enacted by state legislatures. This is the first law to protect the right of farmworkers to organize. In 1983, the Migrant and Seasonal Agricultural Worker Protection Act was approved to regulate housing conditions of farmworkers. Also, the national Immigration Reform and Control Act basically was an agricultural workers legalization program. This program resulted in 1.3 million applications from agricultural workers for legalization (Martin, 1994; J. E. Taylor, Martin, P.L. & Fix, M., 1997).

More recently, the Immigration and Welfare Reform Act of 1996 (J. E. Taylor, 1997) was used to prohibit legal immigrants who are not yet citizens from receiving public aid, Social Security and Medicaid. The argument that favored this law was that it would provide a reason for permanent residents to become citizens, and have a voice in the government. However, “language barriers, among other factors”, in Ward’s (2003) opinion, “still prevent farmworkers from applying for citizenship”.
Agricultural migrancy has characteristics that are unlike ones characteristic of the life that most American’s live. Many US citizen’s have the idea that these workers are not a legitimate minority, rather they are a group of people that are in the U.S. to collect benefits and take jobs from other U.S citizens. Some of these U.S. citizens still continue to think this despite the fact that “many of them are documented workers (Shanks, 2001)”. According to Ward (Ward, 2003), the movement that took place in the 60’s and 70’s, and had a significant role in improving farmworkers lives, needs to be reactivated again. In a New York Times article, Steven Greenhouse (Greenhouse, 1998) says, “Three decades after Cesar Chavez made the shocking conditions of migrant workers a national cause, more farm workers than ever are living in squalor.” He also explains that one of the reasons for this situation is that the U.S. government has not paid enough attention to the large number of migrant farmworkers. While the most recent National Agricultural Statistics Service (NAWS) 1997-98 report did not provide the migrant population size, the federal Commission on Agricultural Workers estimates that there were 2.5 million farm workers in 1998, up from 1.8 million in 1960 (Perloff, 1998). If these statistics are put in perspective, migrant farmworkers represent more than 40% of the total agriculture labor force in the United States (Mehta, 2000). Moreover, quality demands in agriculture production require more manual labor for many tasks. Despite increasing demands put on the agricultural labor force, housing for laborers receives little attention.

According to the Housing Assistance Council (2004), a consulting group in Washington D.C. that studies rural housing, about 800,000 of the current farmworkers do not have adequate shelter. Greenhouse (1998) adds that presently it is difficult for the government to improve the workers living conditions. Hearings before the committee on workforce protection (Hearings, 1999), suggest difficulties in improving housing conditions for migrants arise because the federal government does not provide housing and it does not have much power to force employers to provide better housing.
2.2. SOCIAL ENVIRONMENT

2.2.A. POPULATION

The National Agricultural Worker Survey (NAWS) (Carrol, 2005; National Agricultural Workers Survey, 2000; N. U.S. Department of Labor, 2004) provides extensive information about the migrant farmworkers. A generalized concern presented by NAWS is that there is no consistency in who is considered a migrant farmworker. This problem is particularly important because data collection takes place across jurisdictional and agency lines. This lack of agreement in the definition of a MFW creates frustration within migrant communities. Therefore, for the purpose of this research, I will use the definition of migrant farmworker provided by NAWS: “a MFW is a worker who travels 75 or more miles in search of agriculture jobs. Bringing few belongings, migrant workers move from crop to crop, labor camp to labor camp, and often, from state to state, following the seasons of harvest in different states”. The majority of the migrants in central Illinois live in Texas during the months when they are not working in Illinois. These families maintain their permanent residence in low-income neighborhoods located within 150 miles of the U.S.-Mexico border, especially in Hidalgo County. They live in small towns near to each other (approximately 5 miles apart) or in neighborhoods called “Colonias”. Colonias are small enclaves sheltering communities and culture networks. Colonias are run-down unincorporated communities that began to be developed in the 1950s. They usually do not have what most people see as the most basic of necessities such as running water, electricity, and paved roads. Without such infrastructure, there is a problem with safe, sanitary, and affordable housing as well as safe drinking water, and sewer and 

Figure 2.1. Picture of colonia’s housing units. From HUD http://www.hud.gov/groups/farmwkercolonia.cfm
drainage systems (Housing and Urban Development, 2004). Colonias are areas of extreme poverty with substandard housing, unserviced roads, untreated water and inadequate basic public services (Housing and Urban Development, 2006) (Fig. 2.1). There are more Colonia residents in Texas than in other states. Appendix A shows the Texas Government Code definition of a “Colonia” and State and Federal Agency Definitions of a “Border County” (from: http://www.sos.state.tx.us/border/colonias/what_colonia.shtml).

There are three main migrant streams in the U.S.: Western, Midwestern and Eastern flow. The eastern migrant stream goes from Florida to New England; the Mid-Western from Texas to the Great Lakes and northern plain states, and the western migrates from California to the pacific North West (Holden, 2001). Illinois has an important position in the Midwestern migrant stream of farmworkers because it is the biggest of the three streams (Illinois Migrant Council, 2000) (Fig. 2.2).

Figure 2.2. Midwest migrant stream of farmworkers. The larger stream migrate from Texas. (Illinois Migrant Council, 2004)
The farm worker population can be divided into two general groups: U.S. born and foreign-born groups. Farm workers are mainly Hispanic; most are foreign-born. Almost seven out of ten farm workers in the U.S. are foreign-born. Of the foreign-born workers, 94% are born in Mexico. Of the workers born in the United States, approximately two-thirds are non-Hispanic whites, and one-third is of Hispanic background. A very small percentage of farmworkers represented other ethnic groups including African American and Asian American (Fig. 2.3).

![Ethnic and place of birth distribution](image-url)

Figure 2.3. Ethnic and place of birth distribution according to NAWS (1997-1998)
Farm worker birthplace. 19% born in USA; 81% foreign born. From the foreign born 95% are from Mexico; 2% Latin America; 1% Asia & 1% other countries (from: www.dol.gov/asp/programs/agworker/report_8.pdf)
With regard to gender, NAWS says that four out of five migrant farmworkers are men. 58% of migrants are married, and about 40% of the MFW population travels with their families while doing agriculture labor. The farmworker population is comparatively young, with a median age between 25-34 years old. Seventy-nine percent of the farmworkers are between 20-44 years old (Fig. 2.4).

![Age Distribution of U.S. Farmworkers](www.dol.gov/asp/programs/agworker/report_8.pdf)
2.2. B FARMWORKERS IN ILLINOIS

Illinois has very rich production of corn and soybeans. Close to 32,000 migrant and seasonal farmworkers search for agricultural employment every year in the State of Illinois, primarily to work with corn and soybean seed production; and pumpkin harvesting. This population of workers includes unaccompanied migrant workers as well as those accompanied by their families. Many migrant farmworkers in Illinois have incomes below the poverty line. Inadequate housing, job-related hazards and insecurity compound their very-low incomes. MFWs in Illinois experience discrimination based on U.S. citizenship status, low education and poor health (Illinois Migrant Council, 1999).

2.2.C. INCOME

Migrant families drive an average of 1,200 miles to work in Illinois each agricultural season. Without a doubt, high levels of unemployment and the poverty of southern Texas, (14 to 16% according to state figures), are major reasons for many migrant workers to drive such long distances. Unemployment in Mexican-American counties that are close to the border with Mexico rank highest in the nation. According to the National Agricultural Workers Survey (NAWS) more than one-third of migrant and seasonal farmworker households had annual incomes under $5,000 in 1993 (National Agricultural Workers Survey, 2000). More recently, NAWS reported that the national average of annual income for farmworkers in 2002 was $12,499. However, in Texas the average income for farmworkers is 7,723, only 20 percent of the state median (Tyler, 2005). Migrant farmworkers have noticeably low incomes, since they have to work many odd jobs to support their families (Perloff, 1998).

An increase in salary to a basic living wage ties in with affordable housing if migrant farmworkers are expected to pay bills and improve the quality of life for themselves and their families. The only recent data available about farmworker housing is from NAWS, which collected this data in 1992 and 1993. From this data, it can be concluded that at their permanent residence
location, the majority of the MFW own their house. This may be interpreted as a contradictory finding because of their low income. Bad credit and low earnings create obstacles to buying a home. Therefore, for many of MFWs, the only way to own a home is to live in poor conditions in self-built homes. The other ‘option’ that many of these workers have is to take subprime or predatory loan terms, and/ or buy land from dishonest developers (Kelly, 2004); building a shack in an unimproved “colonias” neighborhood without basic services such as water, sewer and streets is considered the preferable option.

2.3. POLITICAL ENVIRONMENT

In the recent decades, several nonprofit organizations and activists have been advocating for better work and living conditions for migrant farmworkers. Two of the most prominent activists in this regard were César Chávez and Dolores Huerta who, in 1962, established the United Farm Workers Union based in California (Las Culturas, 2004). The action of this group and these individuals resulted in the building of hundreds of housing units. Also, in an attempt to improve housing for migrant farmworkers, stricter regulations at the state and federal levels had been put into place. However, a significant number of migrant farmworkers are illegal immigrants that rarely can benefit from this type of housing. These populations of workers are facing the worst living conditions (Easterbrook, 2004).

Providing housing is a major expense and operating cost for growers. Growers, in many cases, rather than complying with such regulations, have stopped providing housing since they are not required to. (Hearings, 1999). According to growers, these regulations cause a heavy financial burden on their businesses (Hearings, 1999). The principal complaints of growers about government sponsored housing programs range from complex applications, long waiting periods for availability of funds, strict and non-flexible housing regulations and the possibility of lawsuits. For these reasons, the same state and federal regulations designed to improve living conditions of migrant farmworkers have also backfired. This problem puts migrant workers in a difficult
situation where they are forced to rent houses or trailers that are in very poor structural and sanitary conditions, and available at inflated rates (Illinois Migrant Council, 2000). The Migrant and Seasonal Agricultural Worker Protection Act (MSAWPA) was recently modified in order to simplify regulations about migrant housing. In some states there are several agencies (state and federal) that have regulatory authority over migrant farmworker housing. The overlapping jurisdictions of these agencies has become an barrier instead of a solution to the migrant worker housing problem. As result of this situation, housing standards are very difficult to interpret, and almost impossible for growers to meet. This is why the main purpose of the amendment of the original Migrant and Seasonal Agricultural Worker Protection Act (MSPA) (U.S. Department of Labor, 1995) was to remove one of the layers of regulations without compromising anything regarding quality of migrant housing (Hearings, 1999).

2.3. A. SERVICES

A common complaint among migrant workers is that camps which are provided by employers are located in good places for the job, but are not located well for the daily lives of the workers. It is not uncommon to find labor camps isolated from cities and towns. Also, long working days and inadequate transportation, among other factors, make it very difficult for migrant farmworkers to access services that may be available for them. Throughout the country, there are a large number of agencies created to help and support migrant farmworkers, and several of them offer their services on the sites where the housing is provided. These agencies and programs are: The State Migrant Council, Migrant Head Start, Migrant Legal Services, Public Health and the Migrant Clinic. These agencies provide free services to migrants as well as ESL classes, GED classes, day care, counseling, legal assistance, employment assistance, case management, WIC, food stamps, and health assistance. Additional

Regarding provision of other types of facilities in farmworkers housing, Conklin (Conklin, 1966) describes one of the first documented camps for farmworkers in Oregon that provided a playground for the children. Today there is a tendency in the design of farmworker housing to include different facilities such as places for day care, and adult classes within the housing complex in order to support a variety of services. Such is the case of Peoples’ self-help Housing Corporation (a non-profit developer from California) that has assisted over 1000 farmworkers to build their houses and provided services that included day care, health, educational and job services within their housing complexes (Wilson, 2005). Nuevo Amanecer (Jones, 1995) is an affordable family housing complex designed for farmworker families (described in detail as a case study in Chapter 3).

2.3. B RULES AND REGULATIONS IN ILLINOIS

In 1972, the Department of Public Health of the State of Illinois published the migrant labor camp laws and rules and regulations manual. These ordinances were made to regulate conditions such as: camp sites, housing, water supply, waste disposal, food handling, fire protection and administration (Illinois, 1972). In 1997 the Illinois Administrative Code Title 77 (Illinois Department of Public Health, 1997) was created to regulate Migrant Labor Camps (Appendix B) and manufactured housing (Appendix C) (For review of the code see http://www.ilga.gov/commission/jcar/admincode/077/07700935sections.html, http://www.ilga.gov/commission/jcar/admincode/077/07700880sections.html). Code Title 77 was amended in order to clarify some terminology and concepts. For example, concepts of housing unit identification and occupancy regulations were revised. In addition, definitions regarding drainage, water quality and supply to MFW housing were revised and updated. Similar sets of
regulations can be found for different states and federal government agencies. (Conklin, 1966; The Florida Department of Health, 2004; U.S. Department of Labor, 1983).

2.4. PHYSICAL ENVIRONMENT

An early description of the housing of migrant farmworkers can be found in a survey of migrant farmworkers in Oregon (Bissell, 1976). The survey results described the living condition, including the type of housing, buildings and furnishings, sanitary and laundry facilities, exterior lighting, security, and how these housing conditions affected the people. Later, Simons (Simons, 1970) presented specific considerations that need to be analyzed for the design of housing for migrants. One of the issues that Simons et al. mentioned is the fact that the dwellings are occupied seasonally. This work presents some proposals to address seasonal occupancy, for example, portable housing. Other specifics considered include housing site problems, availability and quality of the water supply, as well as the durability, functionality and aesthetics of the buildings. Other interesting aspects of this report include the analysis of building material and construction methods.

Even though this report is more than 30 years old, it still provides a valid reference that presents a comprehensive approach to the design of housing for migrant farmworkers. More recent publications (Dietsch, 1988; Jones, 1995) present apartment housing for farmworkers families. These designs have in common the style (Spanish, with stucco), and include one apartment unit per family, with areas for social interaction between families, playgrounds for young children, and multiple rooms for classes and meetings (see more details as a cases in Chapter 3). Another alternative in design is also presented in Florida by Plater-Zyberk (1995). In this project, the main design idea was to create courtyard housing similar to what is found in the Caribbean/Central America region, in order to address issues of security, privacy, and access to useful outdoor space.
The survey of migrant farmworkers in Oregon (Bissell, 1976) offers one of the first descriptions of several camps in the state of Oregon. This report describes a wide range of dwellings, including units for families, single workers, multiple-unit buildings, trailer homes and cabins. More recently, the Idaho Advisory Committee (Idaho Advisory Committee, 1980) presented an extensive report covering a wide range of housing options including labor camps, farm labor housing communities, low-income public housing, self-help homes, local motels, and mobile homes. Also the Idaho report compared the conditions of the housing facilities between labor camps and labor housing authorities. Moreover, based on the analysis of the different impediments to adequate farmworker housing in Idaho, the author made a detailed list of recommendations for a wide range of issues that included the type of housing, health and safety concerns and migrant camp management. Another interesting concept introduced in this report was the sustainability of the camps. In this regard, this report discussed possible alternatives of funding available in Oregon and the problems and or limitations that may be encountered during the fund raising process for this type of housing projects. In this way, the author provided an overview of this issue that would allow planning of a fund raising strategy in a more realistic and sustainable approach.

In chapter 3 and 4 different housing design alternatives for farmworkers are discussed, which include projects of modular and manufactured housing, as well as cabins. In addition, four case studies of MFW housing are presented along with housing alternatives for MFW in central Illinois.
CHAPTER 3

INTRODUCTION .............................................................................................................................................................................30

3.1 OVERVIEW OF VARIETY OF SOLUTIONS PROPOSED FOR HOUSING MIGRANT FARMWORKERS ........................................31

3.1.A. MFW LABOR CAMPS ......................................................................................................................................................32
3.1.B. MFW MANUFACTURED HOUSING DESIGN ..................................................................................................................35

3.2 CASE STUDIES ......................................................................................................................................................................38

3.2.A. CASE I - CABRILLO VILLAGE, CA ...............................................................................................................................38
3.2.B. CASE II - NUEVO AMANECER, OR ..............................................................................................................................43
3.2.C. CASE III - LA ESTANCIA, FLA ......................................................................................................................................56
3.2.D. CASE IV – 3RD FLOOR OLD BASE HOSPITAL, IL ........................................................................................................60

3.3 CASE STUDIES ANALYSIS .....................................................................................................................................................66

SUMMARY ..................................................................................................................................................................................69
INTRODUCTION

Housing for migrant farm workers is an issue that has been studied through the years. In reviewing other studies and in this research and subsequent design investigations the main question addressed is: what is the best way to provide transitory housing for a specific population, who will use it every year, and make it adaptable, economical, durable, and sustainable?

The methods applied in conducting this research include:

1. An historical overview of responses to the need for migrant farm worker housing, including a review of different factors that have impacted the design of housing for migrant farm workers.

2. A brief descriptive overview and comparative analysis of a range of housing projects that have been built for MFWs. These MFW housing projects are located in rural areas close to the agricultural fields. The majority of housing studied focused on housing for single, and few for families.

3. Detailed cases studies of four housing projects for farmworkers, migrant and seasonal. These are projects for MFW and seasonal farmworkers (seasonal farmworkers are people who work in agriculture, but have not migrated to work in the last two years). These housing units are usually for families and few for single men, and are located in urban areas close to facilities and services. These cases are located in four different states: California, Oregon, Florida, and Illinois. In the cases from California, Oregon, and Florida, the projects were documented through published literature and were augmented by specific information collected via electronic mail interactions and telephone interviews. The information for the Illinois case was gathered through visits and observations of the housing facilities, and by interviewing residents.
4. Interviews and personal conversations with MFWs. First, a survey, conducted in 2003 with thirty-three migrant farmworker families in Champaign County provides additional documentation of the current housing conditions for MFWs. In addition, interviews with two crewleaders in 2005 were conducted to gain a clearer vision of the necessities in Champaign County.

The target of this thesis research is to analyze a variety of housing units, environments, designs, and facilities which have been proposed and provided for MFWs, to understand the culture and needs of MFWs when they migrate to work, and to apply this knowledge to the design process.

3.1. OVERVIEW OF A VARIETY OF SOLUTIONS PROPOSED FOR HOUSING MIGRANT FARM WORKERS

This section presents MFW housing for male worker located in rural areas close to or on the agricultural fields where they work. These units are modular dwellings, usually with common bathrooms, kitchen and eating areas. The section 3.1 is divided in MFW labor camps, and MFW manufactured housing.

Figure 3.1. Labor camps Sleeping quarters Single roof cabins designs (Simmons, 1970).
3.1A. MFWM LABOR CAMP

Simmons (Simons, 1970), in Housing for Migrant Agricultural Workers, wrote a guide for Migrant Labor Camp housing facilities. In this resource, the authors wrote:

“Good housing contributes to the health and well-being of migrant agricultural workers and their families and it is important in maintaining community health. An employer who offers good housing has a greater chance of attracting better workers who stay as long as needed and return another year.”

Simmons’ guide includes several examples of designs for migrant labor camps. The facilities represented include cabins, larger dwellings, (equipped with bunk beds and closets), single and multi-dormitories, and portable units or “trailers”. Cooking, eating, and toilette facilities are also described in this guide (Fig.3.1). Cabins are distributed around common camps facilities in the 1970 Oregon guide (Fig.3.2). According to Conklin and McElroy (Conklin, 1966), by 1962 in the State of Oregon’s four labor camps included trailer homes. Figures 3.3, 3.4, 3.5, 3.6, 3.7 and 3.8 shows different housing/sleeping units in Oregon labor camps.
Figure 3.5. a. Rental housing with bath, kitchen and different bedroom arrangements (Simmons, 1970).

Figure 3.6. Minimum space & arrangement for a family of four: Cooking, eating and sleeping (Simmons, 1970).

Figure 3.7. Unit for a family of four or five, with cooking, eating, sleeping and toilette facilities (Simmons, 1970).

Figure 3.8. Portable plywood sleeping unit with horizontal fiber-glass window (Simmons, 1970).
NYSSA

LABOR CAMP, OREGON

Using a survey of MFW housing completed in Oregon, Conking and McElroy (1966) presents a detailed study of labor camps. The Nyssa labor camp is one of the cases that was studied (fig. 3.12). This labor camp is located on a crop farm in Malheur County (Conklin, 1966).

The camp has 159 units, six two-room units in multiple-type row block (fig. 3.9, 3.10). The single sleeping units placed in rows were designed for families, and single-unit dormitories are assigned to single men. The bathrooms and kitchens are located in separate buildings (fig. 3.11).

Figure 3.9. Temporary tent units (Conklin, 1966)

Figure 3.10. View of the units and play area (Conklin, 1966)

Figure 3.11. View of the central kitchen & dining Room (Conklin, 1966)

Figure 3.12. Aerial view of Nyssa labor Camp (Conklin, 1966).
3.1.B. MFW MANUFACTURED HOUSING DESIGN

Manufactured housing has been used as a solution for MFW housing (Housing and Urban Development, 2004). The state of Washington worked in partnership with HUD to design and construct a Farmworker Housing Demonstration Project located in Mattawa, Washington. The key project components are: fiberglass bunkhouses, concrete tri-plex, single-family panelized homes, single-family manufactured homes, duplex/panelized townhouses, and straw bale structures (Housing and Urban Development, 2002).

In California, there is great concern because large numbers of migrant workers and families arrive for the major work season during the summer every year. The occurrence of winter floods in the Sacramento and San Joaquin Valleys in California create a critical situation regarding housing availability for a very vulnerable population of agricultural workers: the MFWs. Figure 3.13 (Harrison, 1997) shows a design of a prototype of manufactured MFW housing designed by Gary W. Johnston from the University of California, Davis.

Figure 3.13. Prototype manufactured housing unit that will help to fill this need for on-farm housing. San Joaquin County, CA
Patricia Harrison (Harrison, 1997) at the University of California at Davis, proposed a design project to provide housing for MFWs that offered cost-effective, durable units that complied with federal and state regulations. In the project, each unit houses either six or eight MFWs.

The design of these units includes the use of factory construction for the dwelling in order to capitalize on the economics of mass production. (Fig. 3.14, 3.15, 3.16). The project includes improved insulation in walls, floors, and ceilings as well as double paneled vinyl-framed windows. The design uses passive solar heating and cross ventilation for cooling. Additionally, each unit has a central furnace and optional air conditioning.

Figure 3.14. Farmworker housing site plan. (Harrison, P., http://agecon.uwyo.edu/riskmg/humanrisk/ModelUnittoHelpmeettheNeedforFarm.pdf)

Figure 3.15. View of the unit bedroom and bathroom, porch and kitchen (Harrison, P., http://agecon.uwyo.edu/riskmg/humanrisk/ModelUnittoHelpmeettheNeedforFarm.pdf)
Brian Bell with Design Corps has designed units for farmworkers at Adams County, Pa. The design uses manufactured modular units. Each unit houses four laborers who pick apples (Bell, 2004). The houses are located in rural areas, and house single farmworkers. The unit has two porches that create private areas with shade. (Fig. 3.17, 3.18)

Laura Shipman, working with Design Corps, designed emergency units for MFWs and for emergency post-hurricane housing. The manufactured unit has a folding-wall that is used as a porch (Shipman, 2004) (Fig. 3.19)

Figure 3.17. MFW unit. Picture of front view, showing the front and side porches (Bell, Brian. Retrieved (November 20, 2004): http://www.metropolismag.com/cda/story.php?artid=135)


3.2. CASE STUDIES

3.2.A. CASE I - CABRILLO VILLAGE, Saticoy, California

Social, cultural, & economic environment

Cabrillo Village is a former farm labor camp in Saticoy, Ventura County, California. The original migrant farm worker camp was built in 1937. The camp had 100 cabins, in an 18 acres area near the Santa Clara River. In 1975, because the camp did not pass inspections, the owners decided to demolish it. In 1976, residents founded the Cabrillo Cooperative Housing Corporation (CCHC); this organization has purchased 82 of the cabin units to remodel them (Cabrillo). During the 70’s and 80’s CCHC built two new neighborhoods with 74 units (Fig.3.21). In 1977, Barrio Planners and John Mutlow renovated the exiting cabins and designed 35 new family quadruplexes units, with a central private patio (Fig. 3.20). In 1986, 39 new units designed by John Mutlow (Dietsch, 1988) were occupied. These units are two, three or four bedrooms row houses, around common green areas, with private porch and patio. The CCHC provides affordable housing, develops community facilities, spearheads new economic activities, and advocates for low-income people and community-based development.

The following information was collected via telephone interview with the complex manager at the Cabrillo Village Neighborhood Association in 2004. This housing complex has 160 units that accommodate approximately 600 individuals. The
average number of children per household is four; there are 120 families with children. All current residents are seasonal farmworkers. Around half of the units are occupied by retired farmworkers, who live with their families.

All the residents of Cabrillo Village are renters. Those who live in the former camp dwellings are part of the cooperative. They pay an initial deposit of $1,000 as well as monthly payments for expenses. The residents of the houses and duplex dwellings pay a monthly rent. The monthly rent is:

Former camp dwellings remodeled by CCHC
(82 units)
2 bedroom.............$250.00
3 bedroom.............$275.00
4 bedroom.............$300.00

Two neighborhoods built by CCHC
(74 units)
2 bedroom.............$485.00
3 bedroom.............$585.00
4 bedroom.............$605.00

PHYSICAL ENVIRONMENT: The SITE PLAN

Cabrillo Village (Fig.3.21) is designed as a series of three different neighborhoods, with different kinds of dwellings in each one. The complex has community areas, including a community center, a church, a daycare, a playground, a grocery store, and areas for adult education and sports.
Figure 3.22. Quadruple one-floor units (1977), with a central private courtyard. The design used passive solar system to save energy (Mutlow, J., 1976).

Figure 3.23. Cabrillo Village site plan (Mutlow, J., 1994)
The neighborhood built in 1986, designed by architect John Mutlow, consists of 39 row housing units, each with an open living-dining-kitchen area and one bedroom downstairs. Each unit has two, three or four bedrooms, a bathroom; also has a semi-private patio in the back, and a porch in the front (Fig. 3.24.). The exterior areas provide an opportunity for social interaction, which is an important part of Latin culture. These areas also create a sense of privacy and territoriality with their porches (Fig. 3.25) and back patios.

The facades are designed with a Spanish style. Each floor plan type has a different color of stucco, creating different areas in the neighborhoods.

Figure 3.24. Scheme private row units and porches

Figure 3.25. Unit main entrance, Volumetric design defines a porch and provides shade (Mutlow, J., 1994. From http://libweb.lib.buffalo.edu/bruner/project.asp?entry=590, retrieved August 20, 2006).

The community center is 32,000 square feet and can be reserved without charge by any resident. It is used for private and community activities; a connected patio is available for outdoor activities (Fig. 3.27, 3.28, 3.29) (Dietsch, 1988). This building has an open floor plan with a truss gabled roof.

Figure 3.27. Cabrillo Village community center, exterior view of the community center (Mutlow, J., 1994).

Figure 3.28. Cabrillo Village community center, interior view of the community center. Open floor plan provides a flexible use of the space for different social, educational and recreational activities (Mutlow, J., 1994. From http://libweb.lib.buffalo.edu/bruner/project.asp?entry=590, retrieved August 20, 2006).

3.2.B. CASE II - NUEVO AMANECER . Woodburn, Oregon

Nuevo Amanecer is an award-winning housing project that was specifically designed for farm workers. The architects responsible for the design were Roberson, Merryman, and Barnes. The owner/developer is the Farmworker Housing Development Corporation (FHDC), a private, non-profit organization based in Woodburn, Oregon, where Nuevo Amanecer is located.

SOCIAL ENVIRONMENT

According to The Oregonian, there are 150,000 agricultural workers working in Oregon during some part of each year, almost half of this number are children and other dependents ("HOVELS FOR THE HARVEST LACK OF FARM CHECKS FEEDS CAMP SQUALOR", 1998)however the 1997 Census of Agriculture estimated 124,400, while the Oregon Employment Department (OED) estimates the number of farmworkers depending upon the month, between 40,100 to 86,400 (Osborn, 2000). These farmworkers are primarily Hispanic in origin, and less than 10,000 live in the 382 registered farm labor camps. Oregon has one of the largest agricultural industries in terms of value in greenhouse and nursery crops. The average Oregon farm worker earns about $8,000 per year and has a life expectancy of 48 years (OPB, 2001). The city of Woodburn is called the "City of Unity" because it is home to a unique blend of cultures, including Anglos, Hispanics, and Russians. It also has a thriving senior community. One-half of the population is Hispanic; one-fifth is Russian, and one-quarter consists of senior citizen. Woodburn has a moderate climate and some of Oregon's richest soil. These conditions make Woodburn an ideal location for growing a variety of crops, including grass seed, but hops, berries, tulip bulbs, nursery
plants, Christmas trees, orchard crops, and vegetables. This intense agricultural activity depends on farmworkers, who are mainly Hispanic.

Many of these farmworkers reside in Woodburn as seasonal workers, and others come as MFWs every year. Housing for these essential workers is in very short supply.

The Nuevo Amanecer housing complex has 90 units that accommodate approximately 475 individuals. There are 80 families that live permanently in this housing development, and the average number of children per household is 5. Only 10 units are reserved for migrant farm worker families. All residents of Nuevo Amanecer are renters. The rental costs in 2004 were as follows:

**RENTS**
- 2 bedroom/1 bath (770sf) ............... $406
- 3 bedroom/2 bath (1,05sf) ............ $461
- 4 bedroom/2 bath (1,200sf) ............ $506

**PHYSICAL ENVIRONMENT**

**THE SITE PLAN**

The design of Nuevo Amanecer is based on a series of neighborhoods of 20 or 30 units (Jones, 1995). These units are joined by a network of paths that connect them to the other onsite facilities (plaza, laundry, playground, community center, and garden plots) (Fig. 3.30).
Several play areas are evenly distributed on the premises, providing a range of play opportunities for different age groups. There are two vehicle entrances. A pedestrian entrance to the plaza allows access to the community center and day care. Streets for automobile circulation were designed with lengths ranging from 300 to 600 feet; speed bumps were added to reduce car speeds.

The design of the site provides public and semipublic spaces that allow the residents to personalize the area adjacent to the unit and create a sense of privacy and safety. The site design was carried out in such a way that most of the units face other units, but at the same time there are generous spaces between units allowing the creation of a range of types and sizes of exterior spaces. This strategy promotes the integration of the entire community, and at the same time allows residents to be aware of their surroundings (Fig. 3.31, 3.32).

Figure 3.31 Nuevo Amanecer site scheme
Figure 3.32. Nuevo Amanecer. Site plan (Roberson, Merryman, and Bames, 1994)
FLOOR PLANS

The design provides four different types of clusters, A, B, C & D. Each cluster type has townhouses with two, three or four bedrooms. Cluster type A has six units: four 3-bedroom, one 2-bedroom, and one 4-bedroom dwellings (fig. 3.35, 3.36); Cluster type B has three units: two 3-bedroom, and one 4-bedroom dwelling (Fig.3.37, 3.38); Cluster type C has three units: one 2-bedroom, one 3-bedroom, and one 4-bedroom dwellings (Fig.3.39, 3.40). Finally, Cluster D has four units of 2 bedrooms each (Fig 3.41).

There are five different housing unit designs: Unit Types 2, 2A, 3, 3HC, and 4-bedroom dwellings. Only the 2-bedroom unit is one level. One characteristic of the floor plans is the creation of a variety of spaces, including two-story volumes with high ceilings. These spaces make the units seem larger and volumetrically more interesting. The design of these different spaces makes each unit interior a special place. Figures 3.33, 3.34 show pictures of Unit Cluster type B. Pictures of dinning area, living and kitchen. The kitchen is integrated with the living and dining areas creating an open space. High ceiling made the place more spacious and brighter. The units are connected along their short sides providing cross ventilation and noise isolation.
Figure 3.35. Cluster Type A - Second Floor Plan (Roberson, Merryman, and Barnes, 1994).

Figure 3.36. Cluster A - First Floor Plan - 2, 3 & 4 bedroom units (Roberson, Merryman, and Barnes, 1994).
Figure 3.37. Cluster Type B - 3 units - Second Floor Plan – 1,290 sq ft (Roberson, Merryman, and Barnes, 1994)

Figure 3.38. Cluster B scheme. Private units with semiprivate porches and patio

Figure 3.39. Cluster Type B - First Floor Plan – 1,968 sq ft (Roberson, Merryman, and Barnes, 1994)
Figure 3.40. Cluster Type C - Second Floor (Roberson, Merryman, and Barnes, 1994).

Figure 3.41. Cluster Type C - First Floor. 3, 4 bedroom units and laundry in each side (Roberson, Merryman, and Barnes, 1994)

Figure 3.42. Cluster Type D Four two-bedroom units (Roberson, Merryman, and Barnes, 1994)
ELEVATIONS

“Neighborhood Style” is achieved by a variety of architectural elements, such as volumes and heights that create a range of spaces with personality and privacy (Fig. 3.43, 3.44). The entrance to the units is through a semi-private patio that also creates a personal and secure place for the families (Fig. 3.45, 3.46).
The materials and colors were selected with sensitivity to cultural issues of this predominantly Hispanic population. However, the designers also incorporated elements of the Anglo tradition. The elevations exhibit variety and unity of composition simultaneously. The exterior walls are finished with stucco. The frames of windows and doors are white, and the roof is made of red asphalt shingles (Fig. 3.46).

**COMMUNITY AREAS**

Nuevo Amanecer inaugurated the Community Center, Cipriano Ferrel, which will offer a multitude of services and cultural activities for both farmworker families and the general public in Woodburn. The Head Start as well as the community center can be accessed from the public street or from inside Nuevo Amanecer.

The Education Center is the heart of Nuevo Amanecer. It consists of two (2) classrooms for Head Start, two (2) classrooms for child care/preschool, one computer center, a multi-purpose hall, a lounge, conference rooms, an additional playground, one staff office, and a plaza. The Center provides: access to Oregon and Migrant Head Start programs; improved adult educational opportunities, especially for literacy; language classes, and computer literacy; expanded community programs such as home ownership education, US citizenship preparation, clinics, and workshops relevant to farm worker issues; improvements to the
existing Home Childcare network at Nuevo Amanecer aims to fully train and license child care providers, and gives access to computers and on-line technology for Nuevo Amanecer residents and small businesses in the area (Fig. 3.47, 3.48).

The educational center, day care, and laundry areas are meant to be the places where people interact and socialize and find something in common between the diverse groups of the City of Woodburn (Fig. 3.49, 3.50.). Cipriano Ferrel, a leader in the farm worker community dedicated his life to promoting farm workers concerns and working for increased opportunities for workers and their families, and so the Education Center has been named in his honor,. At the time of his death, he was the community organizer on the staff of FHDC (FHDC, 2005). Families in need may access financial assistance and childcare programs and other state-funded programs. Educational classes for adults and youth involve literacy, language, and computer classes. Financial Education classes, which are currently in progress, are available to residents.
Figure 3.49. View of the laundry/meeting area (central building) and plaza, that can be reached from the Community center-day care Plaza. A central open space (divided by the street) integrates the residential and community areas and connects both plazas (Roberson, Merryman, and Barnes, 1994). From: http://www.designadvisor.org/gallery/nuevo.html

The public-use buildings are facing two plazas. Figures 3.49 & 3.50 show the main public spaces. The community center & the daycare building have a common plaza, and the residential area also has a plaza. Both plazas are connected by sidewalks and create an integrated public community area.

Figure 3.50. Plazas Floor Plan. Public Spaces Plan of Educational Multipurpose & Head Start Plaza, & Laundry-Meeting Plaza. Both plazas create a public community area, integrated because no street divides the plaza. (Roberson, Floor Plan. Merryman, and Barnes, 1994).
POLITICAL ENVIRONMENT

FHDC’s residential expansion projects have served as a prototype for farmworker housing. The organization of the Resident Association has been used as a model by other housing developers. The Resident Association is organized by residents from Nuevo Amanecer and Esperanza Court. The Resident Association elected the members that are part of the board of directors and the Community Property Management Team. The Community Property Management Team helps set policies. The FHDC Board of Directors has members from this association. Figures 3.51 & 3.52 show how residents participate in different activities at Cipriano Ferrel Community Center.

Figure 3.51. Educational activity at Cipriano Ferrel Community Center (From http://www.fhdc.org/programs.htm)

Figure 3.52. Social activities at Cipriano Ferrel Community Center
3.2.C. CASE III - LA ESTANCIA. Wimauma, Florida
Duany, Platter Zybert Architects

This housing project, conceived in 1995 (Plater-Zyberk, 1995), was programmed to provide 84 rental units for migrant farm workers on a rural site of 15.5 acres located in West Central Florida (Fig. 3.53). The design creates a secure, affordable, conventional neighborhood plan with a community center and daycare services. The designers determined, after interviews with members of the community, that Hispanic courtyard housing design would answer to concerns like security, privacy, and access to outdoor space. Figures 3.54 and 3.55 show the site plan and its organization: twenty-two blocks with four-units each one; the community center and day care in the center of the complex.
Figure 3.55. La Estancia Site Plan. Four-unit blocks, community center and day care in the center. The open common spaces are the community center and the soccer field. (Duany, Plater Zybert, 1995. (http://www.dpz.com/pdf/9519-Project%20Description.pdf)
This housing project, conceived in 1995, consists of a quadruple courtyard house. The housing units are designed in groups of four around an interior private courtyard.

Each unit has four-bedrooms that can be transformed into three bedrooms and a family room. Also, they have two bathrooms, kitchen and living area, an open “galeria”, porch, facing the patio, and a private fenced patio. The unit rooms are designed for cross ventilation, and have ceiling fans. This is an “individual” design that increases privacy, and provides a lesser amount of community and social interaction. The open areas for social interaction are the pedestrian areas between the four-house units, and the front and courtyard of the community center.

Figure 3.56. Quadruplex unit diagram. Each unit has a private patio and entrance.

Figure 3.57. La Estancia. Four-units floor plan (Duany, Plater-Zybert, 1995)
The Community center with facilities for day care (Migrant Head Start), laundry and meeting room (fig. 3.58) are located by the end of the central street is located. Behind the community center a soccer field is located. The open areas for social interaction are the front and courtyard of the community center, and the pedestrian areas between the units. Figure 3.59 shows facades of the Community center. The community center entrance is marked by a porch with columns, meanwhile the main entrance of each unit is not individualized (Fig. 3.58).

Figure 3.58. La Estancia. Aerial view of a four-houses unit and the Community center (Duany, Plater-Zybert, 1995). (http://www.dpz.com/pdf/9519-Project%20Description.pdf)

Figure 3.59. La Estancia. Community Center facades (Duany, Plater-Zybert, 1995)
3.2.D. CASE IV- 3rd FLOOR OLD BASE HOSPITAL, Rantoul, Illinois

In 1993, Rantoul’s Chanute air force base was closed. Many of the buildings of the base were unoccupied for several years. However, since 2001, the hospital building of the former air force, seen in figures 3.60, 6.61 and 3.63, has been used to provide temporary housing for migrant workers. Each harvesting season, seed companies rent each floor and wing of the hospital, which are then occupied by different work groups under the direction of individual crew leaders (fig. 3.62).

The floors and wings of the hospital have been adapted for this new use. In general, each patient room is occupied by a family or by 3 to 4 men. Each family-group lives in a hospital room but has no private bathroom, kitchen, or social area. The

Figure 3.60. Chanute air force hospital. Aerial view (from Terraserver.com)

Figure 3.61. Chanute hospital. Southwest entrance view. Each floor is occupied by a different MFW group during the agricultural season.
Each floor and wing is rented to a different agricultural company. Each room accommodates one family, or single men. Each color represents a MFW group. One group per floor. Central hall: common semi-public space.

Figure 3.62. Chanute hospital floor plan. Each floor and wing is rented to a different agricultural company. In the first floor central hall people interact between groups.

Figure 3.63. Chanute old hospital South entrance. View of the South and West wind.

Social areas are the hallways and circulation spaces. As figure 3.64 illustrates, the hallway has a sofa, television, and public telephone. For the families that live on the first and second floors, there is the hospital kitchen on the first floor that is used on an assigned schedule. The former dining room of the hospital can be divided into two rooms by sliding doors. This room is used for special activities organized.
by crew leaders and migrant agencies. This room is equipped with tables, chairs, and four sofas that can be used upon approval of the company that currently owns the building. There is a laundry facility only on the first floor of the complex, and the number of washers (six) is insufficient. There are no elevators in use in the entire complex. This situation makes movement difficult for people with physical restrictions and mothers with small children.

This complex is surrounded by a spacious green area, shown in figures 3.61, 3.63 and 3.65, that is used as both a recreation and a meeting place. The exterior spaces can be used by all the tenants of the building, but there are not any designated spaces for gatherings or for playgrounds. Tenants use spaces located near by the West entrance for barbecues or other social activities (Fig. 3.62). The maintenance of the landscape is deficient, but the issue of greatest concern is that the area is not properly illuminated at night.
"THIRD FLOOR NEIGHBORHOOD"

The migrant workers residing on the third floor, one of the “neighborhoods” inside the Hospital, have come to this place since 2002. This group used to go to a migrant camp in Hoopes ton, Illinois, which was closed in 2001.

Social and political environment

Twenty families, eight single men and seventeen children lived in the Third Floor area in 2003. In 2004, there were forty families with one to four children per family. The season of work is divided into two major parts: July to August is the time to detach ears or spikes from the corn crops, and September to October is the time to harvest the corn and pumpkins. The seasons of work are called: July to August “La espiga,” (detaching), from September to October “La maicera” (com harvest), and “La calabaza” (pumpkin harvest). The work place for workers from the third floor neighborhood is around sixty minutes away.

Figure 3.66. Chanute old hospital. Third floor neighborhood scheme shows the areas. Private-unit family area (bedrooms) in yellow, social areas (halls) in blue, kitchen (nurse stations) in orange, and common bathrooms.
The group of families that is located on the 3rd floor (fig. 3.66) has a central hall that is used as a meeting place (Fig. 3.64, 3.66, 3.67), especially for children and mothers. Each family uses a bedroom as a family unit. The nurse stations that are on the third floor only now serve as kitchens that are shared between 2 or 3 families (fig. 3.68, 3.69). Even though families occupy the hospital, there are also unaccompanied workers that share the same facilities.
Figure 3.70. Third floor hospital, central hall. Residents use this room as a “large family room.”

Figure 3.71. Third floor hospital, educational program from IL Migrant Council

Figure 3.72. Third floor hospital. Outdoor spontaneous meeting, close to the West entrance
3.3. CASE STUDIES ANALYSIS

The evaluation of case studies was made comparing the socio-cultural (table 3.1), political (table 3.2) and physical (table 3.3) environments for MFW housing.

Table 3.1 includes two categories of farmworkers: seasonal & MFWs. Both groups work in agriculture, the only difference between these two groups of farmworkers is that the first stays during the whole year, and the second migrates during the harvesting season. Both groups are farmworkers of Hispanic heritage, culture and a similar economic situation. “Cabrillo Village” and “Nuevo Amanecer” are apartment complexes for seasonal farmworkers. In Cabrillo Village and Nuevo Amanecer, residents do not own the house. In Cabrillo Village part of residents belong to a housing cooperative and they only pay a monthly rate to cover maintenance expenses. The rest of the residents pay a monthly rent. In case VI (3rd floor old hospital), the rent is covered by the seed companies as part of their working contract. The majority of MFWs in case VI come to Champaign County but own their houses in Texas.

Table 3.2 summarizes and compares job situation, income & services provided to MFW from the cases analyzed in this research. It can be concluded that the highest percentage of homeownership, in their place of permanent residency, is among MFWs that have no housing expenses when they migrate to Illinois (case IV). On the other hand, there are no home owners among migrant and seasonal farmworkers (cases I, II, III) that have monthly housing expenses. Another result is that residents from cases I, II, and III have all needed MFW services at the housing site, meanwhile MFW in case IV have only a few services on site.
### Table 3.1. Socio-cultural.
Summary of ethnicity, culture, activities, family & household composition of residents. "X", means YES

<table>
<thead>
<tr>
<th></th>
<th>Cabrillo Village, California</th>
<th>Nuevo Amanecer, Oregon</th>
<th>La Estancia, Florida</th>
<th>Former Air Force Hospital, IL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnicity</strong></td>
<td>Hispanic</td>
<td>Hispanic</td>
<td>Hispanic</td>
<td>Hispanic</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>1- Spanish</td>
<td>1- Spanish</td>
<td>1- Spanish</td>
<td>1- Spanish</td>
</tr>
<tr>
<td></td>
<td>2- English</td>
<td>2- English</td>
<td>2- English</td>
<td>2- English</td>
</tr>
<tr>
<td><strong>Living w/relatives</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Migrate w/relatives</strong></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Permanent residency</strong></td>
<td>CA</td>
<td>OR</td>
<td>FL</td>
<td>TX</td>
</tr>
<tr>
<td><strong>Migrant FW</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Seasonal FW</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3.2. Political
Summary of job situation, income & services provided to residents. "X", means YES

<table>
<thead>
<tr>
<th></th>
<th>Cabrillo Village, California</th>
<th>Nuevo Amanecer, Oregon</th>
<th>La Estancia, Florida</th>
<th>Former Air Force Hospital, IL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income</strong></td>
<td>Very -low</td>
<td>Very -low</td>
<td>-Very-low</td>
<td>Very -low</td>
</tr>
<tr>
<td><strong>MFW House owners</strong></td>
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<td>No/yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td><strong>MFW Rent</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Perm. House owners</strong></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Job pays the rent</strong></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Cooperative</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Housing authority</strong></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Private owner</strong></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>On site Classes</strong></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>On site social Services</strong></td>
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<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>On site day-care</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>On site Health care</strong></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3.3. Physical environment

Summary of physical conditions of facilities, design and how these facilities respond to the needs of users. The “X” means YES.

<table>
<thead>
<tr>
<th>Number of units</th>
<th>Cabrillo Village, California</th>
<th>Nuevo Amanecer, Oregon</th>
<th>La Estancia, Florida</th>
<th>Former Air Force Hospital, Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 room-unit/family option</td>
<td>174</td>
<td>90</td>
<td>80</td>
<td>X</td>
</tr>
<tr>
<td>2. bdrm/family option</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 bdrm/family option</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4 bdrm/family option</td>
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<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Private bathroom</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Shared bathroom</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Private kitchen</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Shared kitchen</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Private Laundry</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Living Rm.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Dining Rm.</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porch</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patio/simi-private</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Community meet.Rm.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Classroom</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day-care</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Playground</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>church</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admin.offices</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sport field</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY

From the overview of MFW housing and cases analyzed in this chapter it can be concluded that MFW housing should include units specifically designed for MFW families. The design of these units should include a separate bedroom for parents and children as well as bathroom and kitchen facilities for each unit. In addition, it is necessary that the design encourage social interaction and family-like networking, which are very important elements of the culture of these workers.

As a conclusion it can be observed that labor camps and MFW modular units presented in this chapter integrated the houses to the MFW job environment but isolated them from the rest of the community. In the labor camps and case study IV the housing units do not have private bathrooms, kitchens and bedrooms, while in cases I, II and III units have them. The four case studies analyzed different housing environments for Hispanic MFW and seasonal farmworkers. All cases agreed on the necessity to include in the design accommodations for services such as day care and common spaces for social interaction, outside activities and recreation.
INTRODUCTION ........................................................................................................................................ 71

4.1 MIGRANT FARMWORKER HOUSING IN CHAMPAIGN COUNTY, ILLINOIS ........................................ 72
  4.1.A. MFW HOUSING IN URBANA-CHAMPAIGN ............................................................................. 72
  4.1.B. VARIOUS LOCATIONS IN RANTOUL .................................................................................... 73

4.2 2003 SURVEY OF MIGRANT FARMWORKER FAMILIES ............................................................. 76
  4.2.A. MIGRANT WORK LIFE ............................................................................................................. 77
  4.2.B. PERMANENT RESIDENCY vs. ILLINOIS ................................................................................. 80

4.3 INTERVIEWS ................................................................................................................................ 88
  4.3.A. 2004 OLD HOSPITAL RESIDENTS INTERVIEW ................................................................. 88
  4.3.B. 2005 CREWLEADERS INTERVIEW ......................................................................................... 91

SUMMARY ............................................................................................................................................. 94
INTRODUCTION

Champaign County has a large number of yearly MFWs. This chapter presents qualitative research studying housing for MFWs in the Champaign County area. The data presented was extracted from personal observations, surveys and interviews.

During the 2003 migrant season, a survey was conducted to assess housing conditions of thirty-three migrant families. In 2004 three residents from the Rantoul Old Hospital were interviewed, and two crewleaders were interviewed during the 2005 season. The purpose of these investigations was to obtain information about the number of MFW that come to central Illinois, for how long they stay and geographical origin migration. Illinois offers a variety of resources for migrant workers. These services are designed according to the migrant workers' season. After the season is complete, the majority of these services end and the personnel are dismissed and re-hired at the beginning of the next season. In Champaign County these migrant services include: Illinois Migrant Head Start (IMHS); Illinois Migrant Council (IMC), located in Rantoul and Hoopeston, which provides social services, Food Stamps and IL Migrant Legal Assistance and rental assistance. The Migrant Clinic is also located in Hoopeston, There is also Summer School for the youth in migrant families and Girl Scouts for Migrants.

4.1 MIGRANT FARMWORKER HOUSING IN CHAMPAIGN COUNTY, ILLINOIS

The University of Illinois Urbana-Champaign (UIUC) Library and Information Science, defines MFWs as a population with geographic and social segregation, and transitory residency status - Migrant workers often live in temporary housing and migrate at least one time per year. Often MFWs have limited access to services and transportation (UIUC, 2005). Migrant families in Champaign County live principally in the towns of St. Joseph, Farmer City, Paris, Hoopeston, Rantoul, Urbana and Champaign.
Some workers travel 30 minutes to reach their workplace, while others travel between an hour and an hour and a half each way. This section briefly describes the housing of the thirty-three families at the time the survey was administered. The interviewed families resided at the old hospital, in Rantoul (described in 3.2.D as case III), and in Urbana-Champaign area. The following are the brief description of the houses units inhabited by MFW families in cities of Urbana, Champaign and Rantoul.

4.1.A. MFW HOUSING IN URBANA-CHAMPAIGN

PRIVATE APARTMENTS IN URBANA

In Urbana, MFWs live in private apartments near the UIUC campus. These apartments for students are usually vacated during the summer. In general, the apartments have two or three bedrooms. Fig. 4.1 are two examples of university students units rented to MFWs during the summer. It is common to accommodate one family per bedroom, sharing bathroom and kitchen.

Figure 4.1. URBANA. UIUC Campus Apartments Complexes. Locate 1,2 or 3 families per unit
RESTORATION URBAN MINISTRIES IN CHAMPAIGN

During the summer of 2003 there was usually a large number of migrants living at the Restoration Urban Ministries Building, in Champaign (Fig. 4.2). This complex, managed by a religious organization, was a rundown motel that was used to provide temporary shelter in a variety of cases. During the summer, a number of rooms were rented to accommodate the MFWs. Each family was located in a room with a refrigerator and private bathroom. There is a common kitchen, which was used based on a pre-established schedule. There are no green or play areas outside. The building is surrounded by parking lots that are used as interaction and play areas for children and adults. There is night security on premises and after 9 p.m., no visitors are allowed.

4.1.B. VARIOUS LOCATIONS IN RANTOUL

The Doolittle street apartments are located in the area of the old air force base (Fig. 4.3, 4.4.). This is a complex of 20 two-bedroom apartments, each with a living and dining area, private bathroom area, kitchen with stove burners but no oven. These apartments are exclusively used to house migrant
workers during the summer. There is a small green area in the front of the dwellings where people socialize and a barbeque area is provided next to the parking lot.

The Youngstown and Bennett East side mobile home parks consist of old single-wide trailers that are not well maintained (Fig.4.5, 4.6, 4.7). The trailers have two or three bedrooms are unfurnished and have a kitchen, and living and dining area. The living area is used as both a social area and an extra bedroom. At Youngstown there are open spaces between the trailers that are used for parking. Children usually play at the front or in the street. Bennett is a manufactured home park located on east side of Rantoul.

In this manufactured home park the space between trailers is the same as in Youngstown but there is a backyard that is used for playing and as a meeting space. This backyard makes this housing area more secure, especially for the children. Agricultural fields surround this complex. During the years 2005...
and 2006 Youngstown was closed because it did not pass a building inspection. The families were relocated to the Base Hospital and at Bennet Mobile home park.

The largest number of MFWs in Rantoul live at the Old Hospital, described in chapter 3, Case IV (Fig. 3.60). As described, MFWs are located with their crewleader’s group in each floor and wing of the Old Hospital. At the Old Hospital, there are four MFW groups. One of these groups rent the South Wing, only during the second part of the agricultural season.
2003 SURVEY OF MIGRANT FARMWORKER FAMILIES

The following are results from the survey administrated to thirty-three migrant families who came to Champaign County, IL during the 2003 season. The families interviewed were living in the different housing places shown in section 4.1.

The survey has three general categories: Migrant work life, Permanent residency and Illinois residency as migrant workers. In each category, the families interviewed responded to questions, which belong to specific sections. The following is the general structure of the questionnaire used in this survey. For more details about the questionnaire, please see Appendix D.

A- Migrant work life
   A MIGRANTWORK - (common to both)

B- Permanent Residency
   B HOUSING
   C FAMILY
   D HOUSE & HOME
   E NEIGHBORHOOD

C- Illinois residency as migrant worker
   F HOUSING
   G FAMILY
   H HOUSE & HOME
   I NEIGHBORHOOD

The questionnaire’s main objectives are to analyze the lifestyle that the families have in their place of permanent residence, and compare it with the lifestyle these families adopt when they migrate to Illinois. Furthermore to detect what the housing necessities of the families are when they migrate to work in central-east Illinois. The most significant results are described
and shown below.

The graphics allows comparison by combining the answers at both permanent and Illinois residency.

4.2A MIGRANT WORK LIFE

To interpret MFW work as a lifestyle, the questionnaire focuses in four general areas: months of the year MFWs migrate, length of time working as MFW, how MFW contact the crewleader, and annual family income.

The first question analyzes the number of years that the families have been working as MFWs. Figure 4.8 shows that many families have been migrants for several years and in some cases since they were children. Being a migrant worker is a way of life. Thirty-five percent of the families had been migrants for less than 3 years, and 26% have been migrants between 10 to 12 years. Less than 10 percent have been migrants for more than 20 years. However, as figure 4.8 shows more than 50 percent of the total number of families have been migrants for more than 10 years.

The next set of data analyzes for how long these families have migrated to work in agriculture and how they find out about seasonal work opportunities in Illinois.

Figure 4.9 shows the months of the year where families migrate to Champaign County. The largest group of migrant families comes to Illinois to work in “la Espiga” (detaching the corn ears), from July until the first week of August (35%). Another group
migrates in July, and stays in Illinois until the end of the season (30%), these groups work in “la espiga and la Maicera (corn seed selection)” or, in la espiga and “la Calabaza” (pumpkin harvest). In the middle of October another group migrates only for the second part of the work in la Maicera (11%). Few families come for the entire season, return to Texas for three weeks, and come back to Illinois for the second part of the migrant season. While a majority of the thirty-three families interviewed permanently reside in Texas, two come from Alabama.

The families interviewed come to Illinois with a crew-leader, who is the contact between the seed company and the workers. It is common that MFWs migrate yearly with the same crew-leader. The crew-leaders are in charge of a group of workers and in general they arrive in Illinois a few days before the rest of the group. Figure 4.10 shows the resources of migrant families for contacting a crew-leader. The majority of the families (65%), said that they have come with the same crew leader every year. The first contact with the crew leader, according to Figure 4.10 is a person-to-person contact, which represents more than 80% of the total. Among these families the majority contacted the crew leader through a
friend or neighbor.

It is estimated that MFWs are among the lowest income groups in the nation and the data extracted from the interviews confirm this assessment. Figure 4.11 shows the annual income of the majority of the migrant families surveyed (87%) was between $5,000 and $10,000. Only, twenty percent of the families have an income between $10,000 and $15,000. When they migrate to Illinois, 22% of the families had other jobs during August, which corresponded to the end of the first part of the harvesting season (detaching). At this time there are 3 weeks of “waiting time” until the beginning of the second part of the season (seed selection and harvest). The labor that these families engage in is related to maintenance and cleaning especially of students’ apartments in Urbana-Champaign, before the beginning of a new school year.

4.2. B PERMANENT RESIDENCY vs. ILLINOIS

This section compares the family and housing situation in the place of permanent residency with
the same situation when the MFWs migrate to work, in order to analyze their goods and needs in the MFW housing environment.

**Family household composition**

The number of adults in the majority of the families is 2 at both places of residency. However, the percentage of households with 4 and 6 adults increased in Illinois residing (Fig. 4.12.). This is related to the fact that when the families migrated they shared their housing with other families that may either be part of their extended family or not.

Three children per household represented the highest percent of families in both places (Fig. 4.13). However, the number of households with more than 3 children increases when these farmworkers migrate because often more than one family lives in a single unit.

**Housing**

The survey compared permanent residence and migrant housing conditions. Figure 4.14 evaluates the type of housing, physical conditions, homeownership and monthly renting cost of the dwelling. The results of the survey showed that of the families...
established in their place of permanent residence, 68 percent live in a single-family house, 22 percent in manufactured dwellings and only, 3 percent live in multifamily complexes. On the other hand, when the families migrate to Illinois, the majority live in some type of multifamily complex such as Doolittle apartments in Rantoul and student apartments in Urbana (42%). The second largest percentage reside at the old hospital in Rantoul (33%) (Fig.4.12). In both cases, they consider that the physical condition of the facilities, regardless of the type of housing provided, is good. Therefore, housing quality ranked lower at their migration residency (Fig. 4.14.). At the permanent location, the majority of families owned their houses (almost 80%) and more than 50% of the owners built their own house. At their migration place, employers provided housing to 80% of the families.
However, the people interviewed consider the housing conditions good at their permanent places of residency, and when they migrate to work.

According to the survey, at both places of residency, the kitchen and the bathroom were the areas that needed most improvement (Fig. 4.15). However, the bathroom was the area of most concern at the migration place, while the kitchen was secondary. Availability of bathrooms to take a shower after work was a major concern. Currently the migrant worker often waits for long periods to take a shower, shortening the wait would make their life more comfortable. In many cases more than one family lives in a unit that has only 1 bathroom. Also the kitchen area is...
very important for the lifestyle of the majority of the families. On the other hand, the area of most concern at their permanent place was the bedroom, especially related to number of bedrooms available.

**Home**

Do you feel that your house is also your home?

This question is very important to understand how these people feel in the environment where they live, and if they think they belong in it. In the survey, 82% of the families said that they feel that their house in Texas is their home. On the contrary, when they migrate, 68% said that they do not feel their house in Illinois is their home. (fig. 4.16).

Related to their housing environment, the majority of the families believes that the environment at their migrant place promoted more family conflicts than at their permanent residency (Fig. 4.17). At their permanent location families lived by themselves, while as migrants many of them shared the same unit with other persons. Also, crowded places and a lack

---

**House vs home**

![House Vs. Home](image)

**Family Interaction**

![Family interaction in the living places](image)
of privacy promoted conflicts among household occupants.

**Neighborhood**

Regarding the neighborhood environment, 90% of the families feel that at their permanent location the environment of the neighborhood promotes safe interactions among neighbors. At their migration residency, only 63% feel that they can have a safe interaction among neighbors (fig. 4.18). The reason for this perception could be that some families do not feel safe especially at the old air force hospital where they have to share the premises with other unknown unaccompanied migrants. Also, at the manufactured houses in Rantoul and the Urbana apartment complexes they share these places with unknown people.

The ethnic composition in the place of permanent residency is 95% of Latin American origin, while at their migration site the composition of the places of residency was 65% Latin and 35% mixed (Fig. 4.19). This reflects that in Texas, the families have a very homogeneous environment that is mostly of a Mexican cultural background (language, food, traditions). In Illinois, they have more difficulties with the language, and in
the neighborhoods where the population is mixed; integration with other ethnic groups is low.

Each crew leader’s group is like a big family. The entire group lives in the same place, and they know each other. For the majority of migrant housing, the physical environment did not promote interaction because of the lack of a specific place designed for such purposes, but the “human” environment often compensates for this deficiency.

To have a playground in the neighborhood is very important for the families in Texas as well as in their place of migrant residency places (Fig. 4.20). Playgrounds are also good areas for families to interact, while children have a good time in a safe place.

Another important consideration for the families is to have a Community Center in the neighborhood, to be used for private and community events, classes and activities for adults and children (Fig. 4.21). The Community Center is considered a place for community indoor and outdoor activities. In the place of permanent residency, 82% of the families consider that a community center is important, meanwhile, in their MFWs place, 100% considered that a Community center is necessary. This facility is very important for social interaction. In
general, housing units have reduced floor area and a community center compensates for this lack of space. Because of their culture, the social life of families occupies a central role in their lifestyle. The Mexican-American migrant lifestyle includes gatherings with family and friends. If the weather permits, MFWs prefer to get together outside (from personal observations and interviews).

The services that the families consider the most important to have nearby in Texas are healthcare, supermarkets, and schools. When they migrate, the most important are the hospital and the migrant clinic. This shows that health issues are of great concern for migrant families. Nevertheless, only 42% of families have nearby health care facilities at their permanent residency and less than 10% at their migratory place. Figure 4.22 shows that when MFWs migrate to work, they have nearby more services, than they have in the place of permanent residency. There is a higher range of daycare and library services as MFWs in Champaign County, Illinois. On the other hand, in the place of permanent residency the higher range of services is health services.
Figure 4.22. Nearby Services
4.3. INTERVIEWS

4.3.A. 2004 OLD HOSPITAL RESIDENTS INTERVIEW

An interview consisting of six questions was completed with three residents from the 3rd floor of the hospital (case III). The people interviewed there are women. At this time the men were at work. One of the women migrates with her husband and two children, five-years-old and a six-month-old baby; they live in a single bedroom. The second woman migrates with her husband and three children of seventeen, fifteen and ten-years-old. They live in one bedroom, sleeping in bunk beds. The most difficult thing for them was lack of family privacy, because of the age of their children. The last person interviewed is a single-mother who migrates with her two children and friends; they lived in a single bedroom. The interviews were conducted in Spanish, and video taped.

The questions asked during the interviews were as follows:

1- What are the parts and or areas of this place that you like the most, and why?

2- What are the parts and or areas of this place that you don’t like, and why?

3- How do you feel in this place?

4- In this place, what do you think needs to be changed? And why?

5- What do you think about natural and electrical lighting of the rooms and colors used in the building? And materials used such as carpets, etc?

6- How secure do you feel in this place?

People interviewed have similar opinions about what they like or dislike. Table 4.1 shows observations of the questionnaire answers. These observations are classified in positive and negative observations.
<table>
<thead>
<tr>
<th>QUESTION</th>
<th>Positive Observations</th>
<th>Negative Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 -What are the parts/areas of this place/building that you like the most</td>
<td>• community environment • friendship and calm environment • job &amp; work with the family • no rent • my mom cooks for us • cook outside</td>
<td></td>
</tr>
<tr>
<td>2- What are the parts/areas of this place/building that you don't like</td>
<td>• like everything</td>
<td>• 3 floor stairs • no private kitchen • no private bathroom • one bedroom/unit per family • no play area for kids • need space for storage</td>
</tr>
<tr>
<td>3- How do you feel in this place?</td>
<td>• happy • family environment • secure • good • privacy</td>
<td></td>
</tr>
<tr>
<td>4- In this place, what needs to be changed?</td>
<td>• 1 Kitchen/unit • 1 bathroom/unit • 2 bedroom/unit • Playground</td>
<td>• Prefer to be downstairs</td>
</tr>
<tr>
<td>5 What do you think about the light? Colors? Materials?</td>
<td>• All are ok</td>
<td>• too dark</td>
</tr>
<tr>
<td>6- How secure do you feel in this place?</td>
<td>• Secure in 3rd fl. • good</td>
<td>• Insecure: strangers in the building.</td>
</tr>
</tbody>
</table>

Table 4.1 - Old Hospital. Third floor neighborhood interview analysis
In general, the people interviewed do not like to be on the third floor. The stairs are a communication barrier with other areas of the building and the exterior. Once on the third floor, it is difficult for tenants to come down because of the absence of elevators. Consequently, tenants of the third floor feel that they are in a “cage”. Also, residents do not like to have only one bedroom for the entire family. In addition, they prefer to have a private bathroom and kitchen, and a play area for their children that are safe and easy to supervise. One interesting answer, about what they like the most about the building, was that none of the interviewees mentioned any physical characteristics of the building or place, instead the answers referred to the community and solidarity among the residents (table 4.1). For these families it is more important to know that they are in a safe place (as they feel within family members) than a transitory housing accommodation. Even though bad physical housing conditions could have a negative impact in their lives as migrant workers, an unsafe place has the potential to have even more serious and permanent consequences in their lives.
4.3. B CREWLEADERS INTERVIEW 2005

During the agricultural seasons of 2002, 2003, 2004, 2005 and 2006 there were six crewleaders working for major seed companies in Champaign County. The field works are corn detaching “la espiga” (July and beginning of August), corn harvest “la maicera” (September to October) and pumpkin harvest “la calabaza”, (September and October). Two of them come only to Illinois to work either in corn detaching or corn harvesting. One comes to work in corn detaching and pumpkin harvesting, and the other ones work in corn detaching and harvest.

The interviews were conducted with two crew leaders in 2005 in order to obtain data about the number of workers, families, adults and children in each working season, also to know about their lifestyle as a crewleader.

CREWLEADER INTERVIEW. A

Crewleader A, who is in his 40’s, has been a crewleader working for the same company for 10 years. He has been a MFW since he was 15 years old (table 4.2).

According to the interviewee, twenty families migrated to Illinois in 2004, and for 2005, he expected twenty-four families. Of these twenty families, twelve stay the whole season and the rest come only in July and will stay until around the first week of August. The number of adults varies from 75 to 80, children from 15 to 20 and teenagers number about 16. Also, 10 seniors come with this group (table 4.3). The average number of children per family is from 2 to 3. Crewleader A has been living with his family, as MFW, in the same housing unit for six years. Also, four families that come yearly used to live in the same apartment unit. They consider this place in Rantoul, as their home in Illinois. The crewleader A migrates from Texas, every year from July to October with his close family, in-laws, relatives, friends, and other MFWs.
CREWLEADER INTERVIEW .B

The second crewleader interviewed crewleader B, is in his 50’s, has been a MFW since he was a child. His father was a MFW since 1963, and still he migrates to work and helps as needed. Crewleader B migrates with his family, siblings and their families, in-laws relatives, friends and other workers (table 4.2). In a similar case, the families that migrate yearly used to live in the same room every year, and used the same nurse station as kitchen every year.

Crewleader B reported that his family migrated together from Texas to work as MFWs, and also did jobs that provide services to MFW to take care of children and the housing place. One of his sisters has been working as Family Services Coordinator for Migrant Head Start since 2000; a sister-in-law has been a Health Coordinator in Migrant Head Start since 2003. Other relatives used to work for the migrant Council.

The number of MFWs in 2004 was 40, but only 20 families stayed the whole season. The total number of children was 25 and unaccompanied men were 15 (table 4.3). This group lived in 40 room-units, one unit per family, and only 8 units had a private bathroom. In both cases, the crewleaders were MFW for many years, this was their life style since they were young. Also it is the lifestyle of their close family, relatives and friends.

From data gathered from interviews conducted with crew leaders, the number of families that migrates to Champaign County every year varies. In the first case, it is between twenty to twenty-five. In the second case the number varies between twenty to forty. Half of these families stay in Illinois from July to October, and the other half come only for the first part of the agricultural season, which is during the months of July and August. One of the crew leaders has between five to ten families who
migrate during the second part of the season that is from September to November. Family sizes vary, but the majority of the families have between two and four children per household.

<table>
<thead>
<tr>
<th>Crewleader</th>
<th>age</th>
<th>How long was he a crew-leader?</th>
<th>How long was he a MFW?</th>
<th>Work for the same company?</th>
<th>Migrate with family?</th>
<th>Live in the same MFW housing unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>40’s</td>
<td>10 years</td>
<td>22 years</td>
<td>Yes, for 8 years</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>B</td>
<td>50’s</td>
<td>15 years</td>
<td>40 years</td>
<td>Yes, for 15 years</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Table 4.2 Crewleaders lifestyle

<table>
<thead>
<tr>
<th>CREWLEADER</th>
<th>WORK season</th>
<th>NUMBER OF WORKERS</th>
<th>NUMBER OF FAMILIES</th>
<th>ADULTS</th>
<th>SINGLE MEN</th>
<th>SENIOR</th>
<th>TEENS</th>
<th>CHILDREN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humberto C. Espiga - Maicera</td>
<td>80</td>
<td>25</td>
<td>55</td>
<td>16</td>
<td>6</td>
<td>8</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Juan de la C. Espiga - Calabaza</td>
<td>110</td>
<td>35-20</td>
<td>80</td>
<td>18</td>
<td>4</td>
<td>10</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.3 Crewleaders's group of workers
SUMMARY

Many migrant families live in crowded places when they come to Illinois. These situations, along with lack of privacy, are some of the factors that often spark conflicts that lead to an unhealthy environment for family development. Consequently, housing design for MFW should be flexible enough to accommodate different family sizes as well as being able to promote positive social interaction among household members that is an essential component of the culture of MFW. At the same time, the design should include private spaces such as separate bedrooms for parents and children. At least one full bathroom and independent kitchen need to be included in each unit. Work characteristics of MFW make a laundry area an important facility to be included in the design. Separate living room and dining areas are preferred because of the lifestyle of these families. The interview conducted with the residents of the Old Hospital Third floor made it clear that a place for storage in the unit or within the housing complex would be a very valuable feature that would make a very positive impact in the life of migrant families.

The location of a migrant workers' housing should be reasonably close to health care facilities and services that are available for MFWs. The environment of the complex should promote neighborly interactions and a “home” feeling, shown as necessary in figure 4.16. In that regard, green areas and play areas for different ages are especially important, as figures 4.20 and 4.21 show, for the MFWs it is very important to have a play area, as well as community indoor and outdoor areas.
In the design it is very important to incorporate the necessary facilities that could accommodate MFW services provided by migrant agencies. For example, if the migrant clinic staff comes for vaccinations, there should be a space usable for that purpose, etc. Thus, incorporation of facilities usable for day care, English classes, medical clinic, etc. is essential as shown in figure 4.22.
CHAPTER 5

CONCEPTUAL DESIGN FUNDAMENTALS

INTRODUCTION ............................................................................................................. 97

5.1 CULTURE & USE OF THE SPACE ........................................................................... 97
   5.1.A. MIGRANT FARMWORKER’S LIFE ................................................................. 97
   5.1.B. CULTURAL CHARACTERISTICS OF THE MIGRANT FARMWORKERS GROUPS .................................................. 101
   5.1.C. CULTURAL USE OF THE SPACE .................................................................. 102
   5.1.D. NEIGHBORHOODS ...................................................................................... 106

5.2 HISPANIC’S CULTURAL HOME-ELEMENTS ...................................................... 107
   5.2.A PATIO, PERGOLA & GALERIA ................................................................. 107
   5.2.B CULTURAL PUBLIC ELEMENTS .................................................................. 109

5.3 DESIGN EFFICIENCY ......................................................................................... 110
   5.3.A PASSIVE SYSTEMS .................................................................................... 110
   5.3.B EFFICIENCY IN BUILDING AND ENERGY USE ........................................... 115
   5.3.C ADAPTABILITY ......................................................................................... 118

5.4 COMMUNITY & TEMPORARY HOUSING: POSSIBILITIES .......................... 120
   5.4.A COMMUNITY HOUSING NEIGHBORHOODS ............................................ 120
   5.4.B ADAPTABLE & MODULAR HOUSING .................................................. 122
This chapter analyzes key elements necessary for the design of affordable temporary housing for MFWs. These elements include cultural lifestyle of MFWs, character and cultural meaning of the Hispanic rural dwelling and cultural use of the space, use of energy and, efficient use of the space and construction materials. In addition modular temporally housing and Co-housing concepts will be discussed in this chapter. The life style of MFWs includes a description of every-day activities of different groups of MFW as well as how these workers use the living space depending on the activities that are carried out. The Hispanic rural house, the cultural elements of this type of house and the use of spaces is analyzed. Passive energy and building systems are analyzed as to how these systems can be incorporated into the design concept in order to reduce building costs and energy usage.

5.1 CULTURE & USE OF THE SPACE

The use of the space is influenced by the culture of the people that inhabit a particular dwelling. Therefore, it is important to recognize cultural patterns that MFW develop using the space of their houses in order to incorporate them in the design of units that respond to their needs and lifestyle.

5.1A MIGRANT FARMWORKER'S LIFE

In this section, four cases of MFW families are presented. These are representative of the diverse scenarios of family composition and migration characteristics found among MFWs. In addition, their life styles and associated needs are presented. The following stories of MFW are real cases though the people’s names have been changed.
"MFW for a Long-time"

**Alicia’s family**

Alicia is a six-year-old girl who has been migrating every year since she was a baby. Alicia’s family has been MFW for fifteen years. Her parents and three older brothers come to Illinois to work with the same company year after year. They migrate from Texas to work from July to October. Alicia’s brothers now are older than 15 years of age, and thus they can work in the fields. While Alicia’s family is working, she goes to Migrant Head Start daycare. Alicia’s family lives in Rantoul every year in the same apartment, which has two-bedrooms, and the family uses the living room as an extra bedroom at night. They migrate with the same crewleader, relatives and friends.

**Alberto’s family**

Alberto, who is in his 40’s, has been a migrant for more than twenty years, and he became a crewleader ten years ago. Alberto migrates from Texas from July to October every year with his family and relatives. They have been migrating to the same complex of units in Rantoul since the year 2000. Every year Alberto goes to the same apartment unit with his wife, daughter and son. Generally, between eighteen and twenty-two families migrate every year to work with him. The families, who migrate every year, live in the same apartment unit. For these families, it is very important to be in the same known place, because this creates a sense of home in Illinois.
Jose’s family tradition

Jose’s family has been MFW for four generations, his father was MFW and a crewleader, and since 1967 Jose has been a MFW. Jose’s family migrates every year from July to October. This is their family lifestyle, or in other words, their natural yearly cycle-calendar. Jose travels from Texas with his wife and four children as well as with his extended family: his parents, in-laws, siblings and their families. Until 2002 they used to live in an MFW labor camp in Hoopeston, IL. The labor camp (owned by an agricultural company) was closed after the company was sold in 2002. After 2002, Jose’s group migrated to Rantoul to the old hospital. There are at least seven families with an average of three children each who migrate with Jose every year. Jose is now a crewleader who sees-to the well being of his crew members. When Jose’s crew migrates, these families feel secure living together because they have known each other for a long time and function as a large family. Also, the families who migrate every year use the same unit, as happened in the labor camp. This is very important to them because it is like going back to “our own place”, which adds a sense of stability to their lives (personal communication, Minerva Reina, 2005).

“MFW for short -time”

Three sisters and their families

This is the story of four siblings and their families. These families migrated for one month, only one year. They lived in two housing units of two bedrooms each. Three sisters lived in one unit with their five children. Two married sisters and their families slept in a bedroom each one, and the single mom sister with her child slept in the living room. The youngest brother along with his wife and two babies, and the son of the oldest sister with his wife and baby occupied the second unit. In total there were 17 people including 8 children living in two units of two bedrooms each. Their life in these circumstances was very stressful. They were very
crowded with little or no privacy, and the children without any space to play in, were going from one unit to the other. In
addition to these housing conditions, they did not have enough work to allow them to cover their expenses and save some
money for the rest of the year. For these reasons, these families migrated just one year.

**A typical day in the life of MFW**

At 4:00 a.m. the alarm clock marks the beginning of the day for most MFWs. At that time, women start to prepare lunch
for their kids and for the rest of the family that will be working in the fields. By the time they finish with food preparation and
getting themselves ready for work, it is time to wake the children up and prepare them for school. The children leave the house
at 6:00 a.m., when the school bus picks them up. However, many families need to leave earlier and in that case a grandparent
or relative watches after the children until they take the school bus. When the children arrive home from school, the same person
is waiting for them or a babysitter watches the children from three or four families. After a long and hard working day, parents
arrive at home after 7:00 p.m., very tired, ready to take a bath, and to prepare dinner. Many times parents arrive even later to
find that their children are already in bed, and the next morning, when the children wake up again, their parents are already
gone for work.

After dinner they start preparing themselves for bed after getting things ready for the next day. In addition, it is at this time
that many of these workers have the opportunity to spend time with family and friends, which is very important for them. By 10:00
p.m. almost everybody is in bed. This routine is repeated every day, seven days of the week, with the exception that children do
not have school during weekends, and a friend or relative watches them during that time.
5.1.B CULTURAL CHARACTERISTICS OF THE MIGRANT FARMWORKERS GROUPS

Physical and social sharing are important parts of the Hispanic culture and tradition. As part of the culture, a family lives together in the same place. It is not common to move out of town, because this means leaving the family. Family closeness is the most important value. In the case of migrant farmworkers, they emigrate from their native country looking for work, in order to provide a better life for their family. They migrate as migrant farmworkers for the same reason. After the agricultural season, they migrate back to their permanent place of residency, where they live with the close and extended family. In the Hispanic culture, close friends are considered also as extended family.

As part of family life, it is very important to learn how to live together and share. For this reason, siblings of the same sex share their bedrooms, no matter what their age differences might be. When they migrate to work, families stay all together in one room or in a small unit; parents and children sleep together without privacy. Migrant farmworkers also share responsibilities with other families from the same group. Group members carry out tasks such as babysitting, cooking, cookouts, driving or shopping jointly.

Social life is an important aspect of the culture. When migrant workers find themselves without the space for socialization, they tend to create it in parking lots, sidewalks or halls.
5.1.C CULTURAL USE OF THE SPACE IN THE HOUSE

The analysis of the cultural use of the space is based on personal observations during visits to MFW families through the 2002, 2003 & 2004 agricultural seasons. The data obtained is summarized in table 5.1, which shows the day hours, activities and places where the activities are performed. In a regular schedule for a MFW, a family is at home from 6 to 10 p.m. during weekdays, and the children and caregivers all day during the weekends. The main activities in the MFW life are developed in the kitchen and dining and social areas, as well as outside in the porch, patio and common areas.

The study of the use of the space used by the MFWs when they migrate has been organized into the following areas: semiprivate and private areas of a dwelling, as well as in the semipublic and public areas of housing complex environment. The semiprivate parts of a dwelling are considered the entry, kitchen, dinning, and family areas. The private areas are the bathroom and bedroom. The semipublic and public areas include both open and closed places, like pedestrian circulations, playgrounds, courtyards, patios, daycare, community center, and other common spaces.
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>User/unit</th>
<th>Space</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00 am</td>
<td>Cooking</td>
<td>1 or 2 Women</td>
<td>Kitchen</td>
<td>stove/grill</td>
</tr>
</tbody>
</table>
| 5:00 am | Weak-up
   Dress-up
   Clean up
   Breakfast | Parents & kids | Bedroom
   Bathroom
   Kitchen/dining | Bed
   Closet
   sanitary
   table & chairs |
| 6:00 am | Leave house                       | Parents & kids     | Porch
   sala                 | Change shoes        |
| 7:00 AM - 4:00 PM | Be at Work or School Babysitting at home | Adults
   Kids
   adult | Sala, patio
   kitchen | Tv., table, sofa |
| 4:00 PM | Coming back from school           | School age
   children
   babysitter        | Kitchen
   Sala-dining
   Dining          | table
   seats-sofa
   T.V.            |
| 5:00 PM - 7:00 PM | Arrive from the fields
   Change clothes
   Shower
   cook
   Eat
   Rest
   socialize | Parents & kids
   Workers
   Women
   all
   adults
   all | Porch
   Bath
   Kitchen
   Dining
   hall, porch, galleria | Place to change
   Bathroom
   Kitchen/dining
   Dining equipment
   table area to seat 4 to 8 |
| 7:00 PM - 10:00 PM | Dinner
   Classes
   Meetings
   Shopping
   Socializing
   Arrive from the fields | Parents & kids
   Workers
   Women
   all
   adults
   all | Bathroom
   Dining rm.
   Kitchen
   Sala
   Patio-porch
   Common areas | |
| 10:00 - ... | Rest                             | Adult & kids       | Bedroom                  | Bed/ couch             |

Table 5.1 shows the importance of exterior spaces in the everyday life as part of the culture.
Semi Private Areas

Entry

The entry of the dwelling often is a space where a quick “hello” or “good-bye” can be extended into a long chat or an improvised gathering. It is very common to put chairs in this space to relax while enjoying a cooling breeze and chatting with family members and or neighbors. Also, this area is used to leave muddy overalls and boots after a day working on the fields before going inside. These observations show the necessity of having a space for gathering close to the entry of the house as well as a space for changing and storing work’s clothes and shoes.

Living Room

After a long day of work, for many MFWs it is important to watch TV as a way of relaxing and being entertained. For this reason it is important to provide furniture for the TV. If the home has a living room, this area is usually used for resting, watching TV, socializing and sometimes sleeping. The living room is not necessarily a space to gather with visitors and friends. Instead the living room area is used more as a private family space. The principal space for gathering is “around” the kitchen table.

Kitchen-Dinning

In the Hispanic culture, the kitchen/dining area is the “heart” of the house (Fig. 5.1). All the central activities such as socializing, having family reunions, welcoming newcomers,
and eating are carried out around the table. For many Hispanic MFWs, the kitchen area is strictly the woman's place in the house. MFWs have the tradition of preparing homemade Mexican food every day, for lunch and dinner. They prefer to make their own meals, rather than buying them. The dining area is the place that gathers all the family members, friends and visitors. The activities conducted around the dining table are much more varied than the common uses; the table, as the heart of the house, has many more uses than just eating, like, cooking, socializing, and regular things like homework, sewing, paying the bills, etc. Unlike other cultures, guests are received at the kitchen table, instead of the living or family room. Receiving people this way into their home is a way of welcoming guests in a less formal and a more laid-back way, making everyone feel more comfortable.

Private Areas

Bathroom

This is an important part of the MFW life. Many persons need to use the bathroom in a short time period each day (Fig. 5.2). Because of the busy daily schedule in morning and after work it is important to provide a way for two or more people to use the bathroom simultaneously. MFWs need an easy access to the bathroom after coming from work. For this reason, it is important for the MFW to place the bathroom close to the unit entrance.

![Figure 5.2. MFW bathroom](image-url)
Bedrooms

Culturally, it is important for siblings of the same sex to share the bedroom; this way they learn how to share. It also creates strong ties between the siblings. It is uncommon for siblings of the same sex to have separate rooms, it is preferable to use an extra room for another activity, like study room, sewing room, or for a relative.

Semi-public and public areas

In semi-public and public areas, it is important to have a place to sit and talk with neighbors, friends, or relatives. If these spaces do not exist, people will create them, next to the sidewalk, street, roadway, entrance, or surrounding areas. In the summertime people create spaces to socialize that are under a shaded area, and in wintertime in a sunny area. Socializing is part of the daily activities, it happens when people get together to eat, or after eating as part of daily interaction. The semipublic spaces in and around the housing are the patio and the front and backyards, although these, from another perspective, might also be considered public areas. The public areas are pedestrian circulation, playgrounds, courtyards, and central covered patios. Public areas also included the indoor common spaces and areas for services.

5.1.D NEIGHBORHOODS

According to Rapoport, people interact more easily with others when they can place them in a social space. The subjective environment influences the behavior. In homogeneous neighborhood there is a sense of “us”. Homogenous neighborhoods are more predictable in the type of people, and allow to have a large number of psychological, cultural and other defenses that provide mental and emotional support in stressful situations and result in the personalization of the neighborhood (Rapoport, 1980). The neighborhood is the center or place of the everyday life. It also is a part of the social,
emotional, and educational experience the children (Rivlin, 1987). In the Hispanic culture, neighborhoods are perceived also as an “extended family” place (Arreola, 2004). In other words, the neighborhood is patios. Public areas also include the indoor common spaces and areas for services. The place where the family and children grow. It is common in the Hispanic culture for a family to live in the same neighborhood for several years, and to have the same extended family members living nearby. Most of the migrant families that migrate to Champaign County live in their own house that they built in their place of permanent residence; they live near or with their family. When they migrate to work, the families live in the same housing unit, so all household members support and take care of each other in such a way that the residents feel like a “large family” since they can trust each other as members of a family do. In the neighborhood there are different activities, both planned and spontaneous, like being by the entry of the home and talking with neighbors or finish eating while the children play catch or ride their bicycles, and the men talk under the shade of a tree. These activities are part of the everyday routine, and without these chances to socialize, the day for MFWs would not be complete.

5.2 HISPANIC’S CULTURAL HOME-ELEMENTS

5.2.A PATIO, GALERIA, PERGOLA

The origin of the Spanish colonial style can be traced to the time of the Roman Empire. The Romans designed farmhouses that included a central courtyard and galeria, (Fig. 5.3, 5.4) and this style spread...
throughout the entire empire. The colonial Roman farmhouse style was adopted from different cultures from the Middle East to Spain (Tellez, 1997). In the Hispanic style home design the “el patio” -courtyard- (Fig. 5.3), “la galería” - porch- (Fig. 5.4), and “la pergola” -pergola’s (Fig. 5.5, 5.8) are common elements that are an important part of the dwelling. These elements create different spaces that extend the life from the house to the outdoors.

The uses of the courtyard and “galeria” concepts are common in other cultures such as Japanese (Japanese atrium house) and Chinese (Chinese courtyard house). As Ole Schultz (Schultz, 2004) commented, the courtyard can be understood as a concept that links cultural and social aspects and has countless symbolisms.

The Spanish, and later the Mexicans introduced the Spanish courtyard colonial house into the architecture of the United States. Their houses were simple one level houses built of brick or adobe (Macintosh, 1973).

In Spanish architecture the shape of the house creates the patio that can be a central, U-shaped, L-shaped and I-shaped patio. The “galleria”, verandah or porch complements the courtyard or “patio”. Together they provide shade, and create an outdoor
living space. The galeria and pergola are cultural house-elements of the Hispanic house regardless of the value of the unit as shown in Figures 5.4, 5.5, 5.6, 5.7, 5.8, 5.8 & 5.10. The gallery and porch are used for two main reasons, to provide shade to the house during summer and to have an outside gathering space (Arreola, 2004).

5.2.B CULTURAL PUBLIC ELEMENTS

Social life is an essential part of the Hispanic culture. People get together spontaneously as well in planned gathering events. The spaces such as the plaza used for these gathering events are used on a daily basis. The plaza is part of the culture and is used for socialization, children’s play, fiestas, etc. Plazas often play a central role in the life of many Hispanic towns throughout the United States. (Smith, 2004). Sport events such as “el futbol” (soccer) is, according to Priece and

Figure 5.7. Affordable house with “galeria” in Mexico. (From http://www.e-local.gob.mx/work/templates/enciclopedia/tabasco/7004a.htm, Retrieved September 20, 2006)

Figure 5.8. galeria in a rural house in Mexico. (From http://www.ruralgest.net/casas/101531.html, Retrieved September 20, 2006)

Figure 5.9. Luxurious “galeria” in the Alhambra, Spain. (From http://de.wikipedia.org/wiki/Bild:031106_alhambra_1.jpg, Retrieved September 20, 2005)

Figure 5.10. rural house in Colombia, with galeria, patio (Tellez, 1997)
Withworth, a “cultural necessity” (Pierce, 2004) to create social networks of solidarity among Hispanic immigrants.

5.3 DESIGN EFFICIENCY

The next step in the study was to find a way to make the housing affordable and incorporate efficient construction. This efficiency refers to the use of energy so that the home keeps cool in the summertime and warm in the winter. This is an important consideration because the people who will live in MFW housing will need to have expenses reduced as much as possible.

The conclusions were that in order to make the most economical and efficient housing, it is good to use a passive cooling/heating system, in which the orientation and ventilation of the building are important elements. It is also good to use a system of construction called “advanced wall framing” which is a very simple way of using the least amount of materials, while making the home more thermally efficient through the use of thicker walls that provide more thermal insulation.

5.3.A PASSIVE SYSTEMS

Thermal comfort is a result of the interaction between the buildings and their occupants. According to Nicol (Nicol, 2004), the relationship between human comfort and “comfort temperature” is the result of the interaction between the inhabitant and the building, according the culture and climate environment. This comfortable temperature adjusts to the weather, season and other issues. Figure

![A complex interaction results between occupants and buildings](http://www.lshtm.ac.uk/php/meeting/Nicol.pdf#search=%22cross%20ventilation%20housing%20health%22)
5.11 shows the interaction between occupants and building. If there are situations that produce discomfort, people naturally create solutions to restore this discomfort. In this regard, it is very common to see that MFWs, cover, with aluminum, the windows specially of manufactured units, to reduce heat load from east and west sun exposure. However, this practice has the drawback of significantly reducing natural lighting and ventilation of the house.

Passive design uses light and heat from the sun to light and heat homes, instead of using electricity. Insulation plays a key role in making the most of the sun’s energy. Passive systems can be used in both heating and cooling a home. To cool a home with the passive system, it is necessary to have overhanging roofs to keep the sun out when the sun is high in the sky in the summer months (fig. 5.12). (NESEA, 2000; Solar Energy Society of Canada Inc., 1997; Solar Energy Society of Canada, 2006).

There are many advantages in using passive systems in affordable housing. By using the sun as an energy source, energy bills are much lower than what they would be with standard design practice that ignores climate. Thus passive systems increase the long-term affordability of housing. Though it may be expensive to build, since the building does not rely on any energy except the sun’s, the rising cost of energy and fuel is not a problem. Another great advantage of passive systems is that there is always a lot of natural light in the house because there are many windows. Passive systems are easy to maintain and durable.
Important elements in passive systems are:

**South Facing Glazing.** South Facing Glazing is an important element of passive systems when it is in the northern hemisphere of the world (Fig. 5.13). South-facing glass is good for warming in winter, and cooling in the summer. Materials that are good absorbers of heat are also very necessary in a home with a passive system. These heat absorbing materials like concrete, tile, and bricks have thermal mass. These materials are good because the sun does not have to be directly on the materials to be heated.

**Orientation.** Orientation is important to save energy. The ideal orientation for solar glazing is within 5 degrees of true south. The building can be oriented between 15 and 30 degrees of true South. In general, southeast orientations present less of a problem than southwest because the southeast has less afternoon sun exposure, which is very strong during the summer months (Fig. 5.12, 5.14, 5.15). External Solar radiation can be kept at a minimum when there are overhangs or pergolas protecting the home and providing shade. Shading devices can decrease solar gain by a considerable amount by letting in indirect sunlight (Solar Energy Society of Canada, 2006).
Ventilation. Natural ventilation systems rely on pressure differences to move fresh air through buildings (Walker, 2006). The use of Passive solar design by making use of convective air currents can generate summer cooling and ventilating by the natural tendency of hot air to rise. Passive cooling minimizes the effects of solar radiation through shading or generating air flows with convection ventilation (Solar Energy Society of Canada Inc., 1997).

Passive Ventilation ties in with a passive solar system to use air currents and hot air that rises. There are two types which are commonly used: cross ventilation, and stack ventilation. Cross Ventilation (Fig. 5.16) circulates fresh air throughout the building by using high and low pressure zones from the wind. Stack Ventilation (Fig. 5.17) uses warm air that rises and high and low pressure zones that result in a convection current. Instead of having two windows across from each other like cross ventilation, stack ventilation has a lower window, and a high window; cold air comes in through the lower one, and as the air starts heating up, it rises to the higher window and leaves the building, causing a cycle of circulation (The Division of the State Architect, 2003).
**Thermal mass.** Almost all passive solar systems work in conjunction with thermal mass. The Thermal Mass of the materials plays a very important role in making the units affordable and more energy efficient. Materials with thermal mass absorb and store heat, even if the sun does not hit the materials directly because of their thermal conductivity, specific heat, and density. Materials that have thermal mass include, brick, and concrete of ceramic tile, adobe, and concrete slab, and can be included into the design, for example, the floor, walls. The conductivity of a material depends on the density of the material.

(http://www.minimumimpact.com/twinpines/passivesolar.htm)

In passive systems the most important elements are: the orientation, thermal mass, south facing glass, cross ventilation, and the use of horizontal overhangs. The horizontal protections are overhangs, gallerias, and pergolas with plants growing in the summer and bare in the winter. Other important elements are the circulations of air through crossed ventilation, and high windows, which make the air circulate, taking out the hotter air that is higher up. This is a very simple and also economic system. It is recommended especially for hot areas that have many hours of sunlight during the day.
5.3.B  EFFICIENCY IN BUILDING AND ENERGY USE

Differences between Site-Built, Manufactured and Modular housing

There are different systems that can be use to build a house: site-built, manufactured and modular housing systems. In the traditional system, site-built, after the groundbreaking the house is constructed totally at the site (NAHB Research Center, 1998b), (Wickell, 2006), (NAHB Research Center, 1998a). Site-built houses need to follow all state, local or regional building codes. Some of the advantages of a site-built house are that in general, increases its value over the time, according the house condition and site location.

Modular homes are built in modules at a factory, need to conform to all state, local or regional building codes at their destinations. Local building inspectors verify the structure to make sure it meets the requirements and the finish work is done correctly. Modular homes are transported to the home site on truck, afterward the parts are joined by local contractors. The price per square foot of modular homes can cost less than site built homes. If the modular home is constructed with good quality materials, it may have the same longevity, as a site-built house.

Manufactured housing was former called mobile homes or trailers units. These units are factory built, and follow a Federal building code, the HUD code (Housing and Urban Development code). Manufactured homes are constructed on a steel chassis, and the unit is transported on wheels. The building inspections do not control the structure, but control the work done on site, as electric, gas and water installations. This type to housing is in general less expensive than site built and modular homes, but their value usually decreases through the time.
Advance wall framing

Advance Wall Framing is an efficient building technique that can be applied to site-built construction, but also can be applied to modular building systems (Service Magic, 2006). According to the U.S. Department of Energy and the U.S. Environmental Protection Agency (EPA) and The Partnership for Advancing Technology in Housing (PATH), advanced framing means that there is a use of framing techniques that save the amount to lumber used in a building, and minimizing the waste of lumber. This system is called Advanced Wall framing, Value-Engineered framing, and Optimum Value Engineering (OVE). Using OVE techniques results in lower material and labor costs and improved energy performance for the building (The Partnership for Advancing Technology in Housing, 2006), (NAHB Research Center, 2000). The techniques in wall framing are, using a two-foot modules to minimize the waste of materials and to save labor, separating 2x6’s wall studs, floor joists, and roof rafters 24 inches on-center, and using two-stud corner framing for extra insulation (Fig. 5.18). For the load to be transferred downward, in-line framing can be used, and single lumber headers can also be used (Fig. 5.19, 5.20). Advanced wall framing is very energy efficient because insulation material is used instead of lumber, so that the area of the wall

Figure 5.18. Advance Wall Framing modulation (From NAHB Research Center, 2000)
that is covered by the insulation is maximized. The benefits of this framing system are that since there are very few air spaces, the walls of the home are cooler in the summertime and keep heat within the home from escaping in the winter. It also reduces radiant heat exchange to make the temperature more consistent in all places of the house. Another good thing about this kind of framing is that there is much less air escaping through the building envelope and so it lowers the cost of the utilities. Also the reduction of material waste and building materials, make the building more affordable. Using Advance Wall Framing technique, the building's initial cost and operational cost are reduced (NAHB Research Center, 2000; The Partnership for Advancing Technology in Housing, 2006).

Figure 5.19. Advance Wall Framing. Line up joist and roof rafters (from: http://www.toolbase.org/pdf/techinv/oveadvancedframingtechniques techspec.pdf)
To summarize, OVE’s building system is efficient in the use of the materials, in the transition of the vertical loading to the floor, also is efficient thermally and acoustically because the walls are better insulated. If it is used on site-build or modular building systems, it needs to conform with all state, local or regional building codes.

5.3.C ADAPTABLE

As the research reveals, one of the characteristics of the MFWs households is that household size varies every year. This fact has a direct impact in the design strategy, since it must respond to the occupant’s evolving needs. For this reason, it is crucial that the design provides dwellings that can be flexible in order to vary the number of bedrooms per unit.

Avi Friedman, the author of The Adaptable House defines adaptability in housing as “providing occupants with forms and means that facilitate a fit between their space needs and the constraints of their homes either before or after occupancy” (Friedman, 2002a). Friedman explains that there are different strategies that can be incorporated into the design before the building is constructed. The type of adaptability depends on several factors like a building system and the style of the house. The main parts in making a dwelling adaptable are, the “manipulation of volumes”, “spatial arrangement of the space” “growth and division”, and “manipulation of subcomponents” (Friedman, 2002b).

Manipulation of the volumes by combining basic modules and subdividing them as needs evolve in a practical way to make the dwelling flexible to changing needs. However, it is important to keep in mind which elements in the design may limit this manipulation like circulation and utility areas (Friedman, 2002b). The definition of spaces in the design can also make a dwelling flexible. For example, furnishings like bookshelves can be used to define spaces and have multiple uses. Another form of adaptability is to design the spaces of the house having in mind possible expansion or reduction, for example a vacant space.
under a stair and circulation, and turning this space into a study room. The manipulation of subcomponents refers to elements built-in in the house that can be moved to define different spaces. These elements can be for example, kitchen and bathroom fixtures, prefabricated panels (movable, sliding, folding) or doors, electrical fixtures. (Friedman, A., The Adaptable House, 2002)

The use of open floor plans with the “wet” areas in places that do not interfere with the activities zones provides the flexibility to create different spaces. Figure 5.21 shows the importance to have the wet areas between activity zones, and not within a zone. The space can be subdivided in different ways by furniture, wall-furniture and panels.

Figure 5. 21. Location of wet functions. (a) within activity zones, (b) between activity zones. When are between zones, facilitates adaptability (Friedman, 2002)
5.4. COMMUNITY & TEMPORARY HOUSING: Possibilities

The lifestyle of MFW, when they migrate to work, is based on a transitory community life. During the three weeks to four months of the year that they migrate, MFW live with a group of coworkers under the supervision of a crew leader. In spite of the transitory characteristics of the MFWs community, for many MFW it is a “permanent lifestyle”, because they migrate every year at around the same time of the year across the country following the harvest seasons. These unique “transitory” communities of MFW face many challenges, and unique needs including decent housing that responds to their yearly work patterns. For this reason, it is necessary to find solutions that address their “transitory” necessities of their “permanently transitory” lifestyle.

5.4.A. COMMUNITY HOUSING NEIGHBORHOODS

There is a particular housing style based on community life called Co-Housing (K. McCamant, Durrett. C., 2003), (The Cohousing Association of the United States of America, 2006). In 1988, the concept of Co-Housing arrived in North America from Denmark. Since then, this concept of a housing community has spread throughout North America. Co-housing neighborhoods combine the autonomy of private houses with shared resources and community living. Generally, residents of co-housing are owners of their individual homes (fig. 5.22), which are located around a “common house” with facilities that all the residents share (fig. 5.23). These facilities may include a kitchen and dining room, children’s

Figure 5.22. Berkley Cohousing. Units entrances are facing common open areas. (From The Cohousing Company, http://www.cohousingco.com/proj_Berk.htm)
playroom, laundry, crafts areas and other areas for common activities. In some Co-Housing communities, residents join a rotating cooking team, which prepares and shares the meals with the rest of the residents. Residents also meet at the common house to socialize during the evenings (K. McCamant, Durrett, C., 1989) (Fig. 5.24). Co-housing design encourages the sense of community. Co-housing communities respond to basic needs like childcare, social contact and support, through the combination of the autonomy of private dwellings with the benefit of community living. There are various aspects of Co-Housing that can be applied to MFW housing. First, the “extended-family-community” environment is essential for MFW. They feel secure living together under the guidance of their crew leader, especially when they are in a different environment away from their permanent homes. For this reason, it is important to create neighborhoods for each group of workers, within such a neighborhood, the concept of co-housing with private dwellings and shared resources makes a very good fit for the MFW culture and lifestyle.

According to the lifestyle of the MFW families, it is very important for each family, or extended family, to have their own kitchen to prepare their homemade meals like tortillas, tamales, etc. Each family has their own “family style & taste”, and they prefer to cook in this way. MFW spend few hours in their migrant houses, and

Figure 5.23. CoHousing common room
(From The Cohousing Company, http://www.cohousingco.com/proj_Berk.htm)

Figure 5.24. CoHousing diagram.
Housing units share common open areas, and a common house
kitchen and dining areas are where they spend most of the time with family. For this reason, it is better to have a larger kitchen and dining area for each unit than a “common kitchen”. Instead, it could be more cost efficient to have a “neighborhood common patio” (Fig. 5.25). To get together with neighbors and a “common-community center”, with space to socialize, get together, watch TV, talk, play cards, as well as with a space for MFWs social and educational services and Migrant Head Start daycare. A multi-use community center room available to all MFW living or not at the housing complex would be an important inclusion. Also, it is important to have a laundry, storage and open areas in each neighborhood group.

5.4.B. ADAPTABLE & MODULAR HOUSING

Because the MFW population varies from one year to the next, housing design should be flexible enough to accommodate yearly changes in the population of farmworkers. Modular and adaptable housing could offer a viable alternative to increase design flexibility, cost efficiency, and refitting a physical environment as a result of new circumstances and conditions that could be internal or external to the dwelling (Friedman, 2002b). One possible model of this type of housing is proposed by Partnership for Advancing Technology in Housing (PATH). In this case, modular multiple dwellings consist of box-like sections stacked vertically and horizontally with a crane (Fig. 5.26). Each box is
approximately 14' wide by 50' long (this varies considerably), one-story high, and includes all partitions between a fully framed floor and ceiling. Container Habitats, (Fig. 5.27) presents the CHK, Container Home Kit, that build affordable houses using multiple shipping 14 foot by 40 foot containers basic modules.

Modular housing building system is quick to build, sturdy and energy- and cost-efficient. Therefore, modular housing deserves a closer look regarding its use in MFWs housing.
CHAPTER 6

DESIGN GUIDELINES, PROGRAM & SITE ANALYSIS

6.1. DESIGN GUIDELINES ................................................................. 125

6.2. PROGRAM OF DESIGN .......................................................... 130

6.3. PROGRAM PROJECT DESIGN DIAGRAMS ............................... 133

6.4. SITE ANALYSIS ........................................................................ 135
   6.4.A SITE LOCATION .............................................................. 138
   6.4.B SITE .............................................................................. 140
6.1. DESIGN GUIDELINES

The According to the data gathered in this research, the design guidelines are organized by culture and lifestyle aspect of the MFWs, MFW crewleader’s groups, housing units, community areas and facilities, personalization, play areas, open spaces, access, security and building materials. In addition, the Cooper Marcus guidelines for medium-density family housing and urban spaces were used as reference (C. Cooper Marcus, 1986; C. Cooper Marcus, & Francis, Carolyn 1988). These are general guidelines that could be used when designing a housing complex for Migrant Farmworkers.

1. Culture & Lifestyle. In the design of housing facility for MFW, it is important to keep the following factors under consideration:

- In Illinois, MFW migrate for 3 weeks to 4 months per year to work in the corn and pumpkin harvest.
- MFW life is very busy, with extended work schedules.
- MFWs spend time at home early in the morning, late evenings & nights and some weekend days.
- Large families are living together in the same unit.
- Relatives and/or friends live together or nearby.
- Family's privacy is an important consideration.
- Social interaction is an important part of the MFW lifestyle.
- Many MFW migrate every year to the same place, and if it is possible for them, they try to stay in the same complex and unit every year.
2. **MFW crewleader groups.** The majority of the MFWs migrate with a group of workers and the crew leader who is the liaison between the employer and the employees. For this reason it is important to consider the following factors:

- MFW crew-leader’s group should live together in the same area.
- Privacy for each family in the group is important.
- The groups of MFWs support each other as a family.
- Social interaction and spontaneous activities within the crew-leader groupings are part of the MFW life.

3. **Housing units.** In order to respond to the basic necessities of MFWs within housing units, it is important to provide:

- One unit per family.
- Separate sleeping rooms for parents & children.
- One kitchen per unit.
- One bathroom per unit, providing the opportunity for it to be used by more than one person at the time.
- A large kitchen and dining area is the center of the family’s interaction.
- Cross ventilation provides cooling and air circulation.
- Exterior spaces are used for family and social interaction, as well as for resting.
- MFWs need a space to leave work shoes and store them in an outside storage near the entry.
- A storage room for each unit, to store the family’s items needed for migration, located adjacent to the unit.

4. **Community areas and facilities.** As a part of the housing development for MFW, it is very important to provide a community center as well as community areas. The main community areas and facilities are:

- Administration office.
- Accessible Laundries that are open only to the residents.
- Areas for indoor and outdoor social interaction, for celebrations, meetings, conferences, etc.
- Area for Social services.
- Area for Health Services.
- Area for Education, for adult classes and workshops.
- Daycare facility on site.
- Public Telephone.
- Transportation services.
- A convenience store should be easily accessible to the residents, but it is not necessary for it to be in the complex.

5. **Personalization.** If a place where people live and the home have character, it is easy for those people to find their identity there. For that reason, it is important to provide for the following:

   - Allow for identification of each neighborhood area.
   - Allow families to personalize each unit entrance.
   - Provide the housing and community areas with a character that reflects the culture of its inhabitants.
   - Create diverse open common areas, like plazas, courtyards, and playgrounds.

6. **Play areas.** It is important to provide children’s play areas with a safe, educational environment by keeping the following points in mind:

   - Accessible play areas should accommodate children of different ages.
   - A playground for toddlers in each neighborhood area is necessary.
- Playground for school age children in the housing complex is necessary.

- Provide open areas for recreational activities, such as ball games, jogging, etc.

- Sports fields for soccer and other sports are important, especially since soccer is an important part of the Hispanic culture for a range of ages to adults.

- Provide seating in each play area for parents/guardians accompanying the children.

7. **Open spaces.** As a part of the MFW culture, people use open areas for many different activities. In a space like this, it is important to provide:

   - Small, medium and large-scale public open spaces.

   - BBQ and socializing areas in each neighborhood and in the common areas of the overall complex.

   - Shaded seating areas, which facilitate social interaction.

   - Separate vehicular and pedestrian circulation.

   - Pedestrian circulation and bike trails that connect all the complex areas.

   - Walking/Bike trails for toddlers in each neighborhood.

   - Change the surface texture of the street wherever there is a nearby crosswalk so that drivers slow down.

8. **Access.** It is important to consider the following factors:

   - Easy dwelling pedestrian accessibility from the parking lot, within the neighborhood and from the housing complex.

   - Easy vehicular access to parking lots from public and private streets.

   - Easy accessibility to common Public facilities (day care, community center, sport fields) within the housing complex and from outside the housing complex.
- Individualize the entryways of each neighborhood, and housing complex, to create a sense of personal belonging.

9. **Security.** It is important to consider the following factors:

- Separate dwellings for families and single workers because it gives each group a greater sense of security when they are with their peers.
- Install exterior lights in the playgrounds, unit entrances and neighborhood entrances, open meeting areas, common facilities and streets.

10. **Building materials & system.** In order to have a more efficient building regarding the use of energy, materials, ventilation, maintenance, sanitary conditions, and in order to make it more economical to build and use, it is important to have:

- A flexible Multipurpose room in order to have different activities at once, or to unite the rooms to have one large space.
- Adaptable/transformable building system to adapt the units to each group of workers.
- Efficient passive energy systems (solar and ventilation).
- An Economical and durable construction system.
- The utilization of standard, off-the-shelf materials.
- Floor surfaces which are easy to clean (i.e. concrete pavers) to minimize maintenance.
6.2. PROGRAM OF DESIGN

Based on case studies and existing literature, the number of units per acre in farmworker housing complexes varies between 4 and 15 units. In this thesis, the design is focused on temporary housing for migrant farm workers. This is a real necessity for people who migrate every year to Champaign County, IL. In Champaign County, there are five large seed companies that hire crewleaders that bring MFWs every year to work in the detaching, and corn selection. The average number of MFWs families that work with each crew-leader is 20 families.

The program of design is divided in two general areas: Public and Residential areas. The design program of the Public area has the common public area facilities: the community center (for socialization, community events and MFWs services), and a day care, Migrant Head Start. The Public area also includes common open areas for sports, socialization, and other recreational activities.

The design program of the Residential area consists of eighty MFW housing units divided into four neighborhoods of 18 to 22 units each. Also, an area for future development to accommodate additional units for migrant or seasonal farmworkers is included. In each neighborhood there are housing units with 1, 2, 3 and 4 bedrooms. Each crewleader’s group will be assigned to a neighborhood to promote the sense of extended family in each neighborhood.

PROGRAM PROJECT DESIGN

The program of design is divided into Public, Semipublic, Semiprivate and Private areas (see Appendix E). The program of design is organized into Public areas, indoor and outdoors; and Residential areas. The residential area for MFWs, is divided in four neighborhoods, with 20 units in each one.
PUBLIC AREAS

Indoor

The Public area has central facilities. These facilities are going to be open to the residents of the complex, as well as all other migrant farm workers of Champaign County and its surrounding counties. There are four main facilities in the public area: Administration, Community center, sports and Migrant Head Start daycare. Administration is for the use of the community center, common open areas, sports and residential areas. The community center is for the use of the complex residents, as well as other MFWS and MFWs services. Migrant Head Start is a Federal program which requires that at least one person in the children’s family has to be an MFW. This day care is for MFW children from 6 months old to 6 years old, in Champaign County.

The community center has a multipurpose room, a flexible space that can be divided into three rooms with a common kitchen. It also has the administration offices for the MFW housing complex, meeting rooms for adult education like GED, ESL and job training, offices for the Migrant Clinic which provides health services, an office for the Migrant Council which provides Social, legal and educational Services. There are also bathroom facilities for the sports area.

Migrant Head Start day care will be on site. The day care is for MFW children in the Champaign County area. The number of children for this facility is 80, ranging from 6 months to 6 years of age. There are four classrooms, nursery, toddlers, 2-3 years old, and 4-6 years old. The number of staff is 18 including administration, coordinators, teachers, teachers aide, kitchen and maintenance.
**Outdoor**

The Public area outdoor common open areas are a soccer field, and two basketball courts, and a central plaza in front of the community center. These areas are open to everybody and have access from the outside of the housing complex, as well as from the housing complex residential area.

**Residential Area**

The residential areas have eighty MPW housing units divided into four neighborhoods of 18 to 22 units each. The housing units are going to be equipped with one, two, three or four bedrooms. Each unit will have a private restroom, private kitchen, large kitchen - dining area, semi-private patio, and a porch. Each of the four neighborhoods will have common public and semi-public areas where the residents will be able to have different activities like getting together to eat, play, chat, relax. In order to be able to do these things, the neighborhood will need to have places for social interaction and BBQ, a covered patio, and a playground for toddlers.

There are open common spaces that are a part of the residential area, like a playground, a small plaza, and laundries. For every two neighborhoods, there will be one laundry. Throughout the neighborhood there are common spaces, which are
open to the public. These spaces include: the “plaza”, playground, and recreation areas that are located near the common central facilities.

6.3. PROGRAM PROJECT DESIGN DIAGRAMS

MFW Housing Complex Diagram

The MFW complex is divided into two general areas, public and residential. The public area is open to all the MFWs in Champaign County, visitors and Rantoul community.

The residential area is exclusive for MFWs, and is divided into four neighborhoods, one for a crewleader’s group. Every neighborhood has a “life of its own”, but at the same time the design integrates all of four as a whole. Figure 6.1 shows a diagram of the relationships between housing units and open areas of a neighborhood. In each neighborhood, housing units surround a patio, that is a “common

Figure 6.1. MFW Housing complex diagram.
group” area, with spaces for different activities, and play areas for toddlers.

**Crewleader’s Neighborhood diagram**

Figure 6.2 represents the relationship of the component parts of one Neighborhood between housing units, different scale open common areas, housing units are created surrounding a large patio, that is a common “group” area, with spaces for different activities. The idea is that each neighborhood is as a large house, with the rooms - units-around a patio.

Figure 6.2. Crewleader’s neighborhood diagram.
6.4. SITE ANALYSIS

INTRODUCTION

The design component of this thesis is located in Champaign County, Illinois (fig.6.3). In this area there are six large seed companies hiring migrant farm workers every year. MFWs usually live in Hoopeston, Rantoul, and the Champaign-Urbana areas. Figure 6.4 shows places where MFW work, live, and three possible site options for the location of the project. These site options are located in Rantoul, Hoopeston, and Urbana-Champaign. Table 6.1 compares available resources and services for MFW in these locations. Until 2003, the majority of the resources for MFW were in Rantoul and Hoopeston. Since the year 2003, the number of MFWs that live in Hoopeston has decreased significantly, because of a housing shortage. On the other hand, the number of MFW in Rantoul has increased, as well as the services available to them. In 2005, the Migrant Council approved a project of the Illinois Migrant Council, which was to develop housing units in Rantoul for migrant and seasonal farmworkers. Presently, in June 2006, the Illinois Migrant Council is in the process of looking for sites and existing developments that could be used for the project.

Figure 6.3. Map of Illinois, showing in red Champaign County, located in central-East Illinois. (1997. From Magellan Geographic. www.maps.com)
The analysis of services provided to MFWs (table 6.1) in the proposed site options, revealed that the best site for the MFW housing complex is Rantoul. The Village of Rantoul has available most of the services for MFW and its geographical location is equidistant to different work locations. Besides, MFWs feel safe in Rantoul because they are very familiar with this small town.

Figure 6.4. MFWs places of work, housing and site options in the area of Champaign County.
## Table 6.1. Services for Migrant farmworkers in Champaign County, Illinois

<table>
<thead>
<tr>
<th>SERVICES</th>
<th>Champ-Urbana</th>
<th>Rantoul</th>
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<th>Ludlow</th>
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Table 6.1. Services for Migrant farmworkers in Champaign County, Illinois
6.4.A SITE LOCATION

The site chosen to locate the MFW housing complex is in the Village of Rantoul. The most important selection criteria were job accessibility, schools and services available to the MFW. The Village of Rantoul was selected because this town is central to the majority of the migrant MFW work places, and has most of the services offered specifically for MFW (Table 6.1).

Figure 6.5 shows Rantoul main routes, schools, services, commercial areas and public parks. There are open lands on the west side of the Village. This location is close to interstate I-57, IL 45 and IL 136 routes.
The village of Rantoul has prepared a zoning proposal plan for the next twenty years (Figure 6.6). The proposed site zoning is residential areas R2 and R3. The specifications of R2 & R3 zoning are in Appendix 6 (http://www.village.rantoul.il.us/villagehall/villagecode/pdf/chapter_27.pdf)

![Proposed zoning areas](image)

Fig 6.6. Village of Rantoul Proposed zoning plan. A white circle shows, the thesis site’s area: residential R2 & R3 zone (yellow), commercial area (red). (From Village of Rantoul, 2006)
6.4.B. SITE

The site selected for the design, is at the West of the Village of Rantoul, at the intersection of S. Murray Rd to the Westside & CR299 to the North side. The dimensions of the site are 850 feet by 1400 feet, a total of 23 acres.

The boundaries of the Site are: S Murray Rd to the West, CR299 on the North side, open field to the South and East. At the moment, the site is undeveloped, but the village of Rantoul has planned to have that land be in a residential zone. In the lot to the North, the village of Rantoul is planning to build a public park, within a residential area R-2 & R-3 (see Appendix F). Rantoul village is planning to revitalize the West area of the proposed site (marked red in the master zone plan) by

Figure 6. 7. PROPOSED SITE. The site is on the South of a future residential R3 area. The school on the North side is at a walking distance. On the West side will be a commercial area. A park is designed connecting these both areas.
the development of a commercial zone. In this area on S. Murray Rd a Wal-Mart store will open in 2007 (Fig. 6.7).

The location of the land is convenient for the migrant workers because it is close and accessible to roads that take them to their workplaces like Interstate 57, US 136 and US 45. There is also an elementary school that is within a walking distance from the site. The walking distance for the Rantoul City Schools has to be a mile and a half or less (from personal contact to Rantoul City Schools, November 2004) (fig. 6.8). Figures 6.9 and 6.10 show different site views. The viewpoints are marked in the aerial view Fig. 6.7.
Figure 6. 9. Site view number 1 - View from farther North

Figure 6.10. Site view number 2 - view from Murray Rd & Cr 299, North-West corner

Figure 6.11. Site view number 3. View from the West side, on CR 299
CHAPTER 7

INTRODUCTION ........................................................................................................................................... 144

7.1. SITE DESIGN ...................................................................................................................................... 145

7.2. NEIGHBORHOODS ........................................................................................................................... 146

7.3. HOUSING UNITS ............................................................................................................................. 148

7.3.A INTERIOR SPACES ......................................................................................................................... 148
7.3.B EXTERIOR SPACES ......................................................................................................................... 150

7.4. ENERGY AND EFFICIENCY ........................................................................................................... 152

7.5. FLEXIBILITY AND ADAPTABILITY ............................................................................................. 152
INTRODUCTION

Migrant Farmworkers have had a shortage of decent housing in the United States throughout the years, and currently this pattern is exhibiting an increase. Families of migrant farm workers are especially affected by the lack of affordable housing because of their socio-economic uniqueness given that they are one of the lowest-income groups in the nation. Characteristics of the need for this unique population include: yearly needs for short term housing that can vary from three weeks to four months per year, in Champaign county, Illinois; yearly variation in population size and composition; and cultural composition of the MFW’s. These characteristics generate the particular conditions for the design of temporary housing for families of different sizes that incorporate the elements of cost efficiency, affordability, adaptability, quality and culturally sensitive design.

To respond to the question addressed by this research, “what is the best way to provide temporary housing for this specific population, who will use it every year for a short period of time, and how can we make it adaptable, economical, durable, and sustainable?” the design is a combination of different elements.

As an application of the foregoing research study, there are main components in the design of the housing complex as well as in the housing units. These components are the culture, traditions and lifestyle of MFW; efficiency in the use of the space, energy, building materials to make it affordable to build and affordable to future residents. The sense of neighborhood and community environment is the basic key of the site proposed. In the design of the housing units the key elements are the use of core modules, and the combination of these modules create different units; use of passive systems with the use of elements that
create shade, take advantage of cross ventilation and specific unit orientation; use of a building system that is efficient in the use of energy, installations and materials; and at the same time incorporates Hispanic home elements.

7.1 SITE DESIGN

As outlined in chapter 6, the site is located on the west side of the Village of Rantoul (Fig. 6.5, 6.7) because of the city’s central location to work areas, and services available to MFW. The final design divides the site in two major areas: the public and the residential areas (Fig. 7.1). The public area is located at the west side of the lot with its main accesses on South Murray Rd. The public area is open to residents and non-residents of the complex because within this area are located services for MFW are located, e.g., daycare, social, health and educational services and sports fields (Fig. 7.2). The residential area, composed of four neighborhoods (Fig. 7.2) is located on the east side of the lot, and its main access is from the North along a secondary street, making this area more private by isolating it from the main vehicular traffic.
traffic. Importantly, the location of the residential area in this side of the lot allows safe walking access to the elementary school and future city park. There are two short vehicular streets on either side of the residential area. Each street has access to two neighborhoods. The idea is to minimize the vehicular flow, and at the same time increase pedestrian circulation inside the complex (Fig. 7.3 & 7.4).

The design of walkways in the project has a dual purpose. The first aim is to create an internal network between all the areas in the project and secondly facilitate residents' interactions that are the first step to creating a community environment.

### 7.2 Neighborhoods

The design concept of each neighborhood is based on the idea of the Hispanic “Hacienda” or farm-house. These farm houses incorporate several architectural elements including the courtyard and galeria that reveal the Hispanic cultural traditions in rural settings. In the same way, this thesis is an attempt to respond to physical and cultural needs of MFWs through design that incorporates architectural features.
that are intended to allow residents to develop a sense of belonging. In order to accomplish this objective, each neighborhood is designed in a way that a central patio or courtyard is created. This central courtyard is the space where systems of activities that are common to the residents, as a large family, take place (Fig. 7.5). These activities include socialization, spontaneous get together (barbequing and parties), after-dinner chatting and children’s play. The design creates different spaces within the courtyard. To respond to the diverse spectrum of activities that can be held in the neighborhood, landscape elements such as vegetation, lighting, walkways, benches, play grounds and pergolas (Fig. 7.5) are used to define activity areas. A central covered patio with BBQ grills, picnic tables and a playground is created. Important issues in the design of this space are easy access and noise reduction.

The concept behind the design strategy of the neighborhoods is essentially to manipulate space and scale to promote activities that could involve different size groups, from few people to the whole neighborhood. In addition, the creation of diverse spaces in each neighborhood gives them character that makes residents feel comfortable.
7.3 HOUSING UNITS

According to the lifestyle of the MFW, being outside of one’s home is just as important as being inside. Hispanics spend as much time outdoors as they do indoors. In the Hispanic culture, it is common to see people outside, enjoying the outdoors. If the day is nice, even though it may be hot, Hispanics will usually be outdoors, talking with friends and completing other chores.

7.3.A INTERIOR SPACES

Private and semi-private activities take place in the setting of the home. Some examples of the private activities that take place in the home are resting, sleeping, hygiene. Semi-private activities are those in which both family members and others participate. Affordable dwellings that are easy to build and flexible, are accomplished through the use of two basic modular structures that are used to combine and create different housing units. These two modules, the semi-private “living” areas module, and the private “sleeping” module form the basic core unit (Fig. 7.6). The activities to be held in the living module are cooking, eating, socializing, resting, watching television, meetings, studying, storage and also activities that involve the bathroom. The sleeping modules are used for sleeping, resting, studying, and storage.

Figure 7.6 Core modules scheme. Zoning & circulations
The module’s dimensions are multiples of 2 feet or 24 inches, based on the building system of advance all framing (OVE), in which the structure is separated every 24 inches. In this way, the use of materials like plywood and drywall is more efficient. The module of the bedrooms is 12 feet by 28 feet, 336 square feet, and the module of the kitchen is 28 feet by 18 feet, 504 square feet, with an inside living area of 464 square feet. The inside living area total square footage of the two basic modules is 800 sq ft. A unit of two bedrooms can accommodate 2 to 8 people, depending on how the beds are arranged in the bedrooms, and if twin, full, or bunk beds are used.

The bathroom and kitchen plumbing installations are along the same wall, making it more economical. The bathroom is a factory-constructed module. The bathroom is a point of conflict in the daily life of MFWs because many household members need to use different parts of the restroom at the same time, especially after coming home from work. The design of the restroom separates the three main uses of the bathroom (Fig. 7.7). With this type of bathroom design, three people can use the bathroom while maintaining privacy at one time.

Each module has cross ventilation, with windows on the North & South walls (Fig. 7.8, 7.9 and 7.10). The sleeping module has an interior flat ceiling with an attic space that works as an air insulation chamber (Fig. 7.9), meanwhile, the living module has
an interior slope ceiling with a high window (Fig.7.10). This window is designed for cross ventilation, to remove the hot air during summertime. During wintertime this window allows the sun exposure into the house.

7.3.8 EXTERIOR SPACES

In the daily life of a MFW, spending time outside, or doing different pastimes, is essential. For this reason, the design of exterior “living” spaces is an important concept in this project. It is critical to have different scales of exterior spaces near the house and in the neighborhood.
Some important parts of the home in the Hispanic culture are the “galería” and “patio”, and also “la vereda” or sidewalk. These elements create different scale of spaces with a range of privacy, between public, semi-public, semi-private and private (Fig. 7.11). Having these elements of the design in mind, On the front side, “la galería” creates a semi-public space for sitting, resting and socializing; also this space makes a transition between the public and private zones. This component in the design, “la galería”, provides shade for cooling during summer time. On the back side, a semi-private patio (Fig. 7.11), covered with a pergola, next to the kitchen has been incorporated as a way of expanding the kitchen/dining area to the exterior, so that the people living in the unit can choose to eat inside or outside. The pergola creates the space and provides shade in summertime.

The outside living areas footage in a core module are as follows: the galería (semi-public) is 148 square feet, and the patio’s (semi-private) with pergola area is 160 square feet. Also, these two elements are important to give the residents the chance to personalize each dwelling with things like plants and flowers. The homes will also be individualized by painting them in a variety of colors.
7.4 ENERGY AND EFFICIENCY

As discussed in chapter 5, the use of building and passive systems is a critical component of this project since these systems minimize waste of material and energy consumption. In this regard, elements of the passive solar system have been incorporated in the design of the housing units; with the objective of keeping the temperature at comfortable levels with a minimum use of energy. The most important passive solar elements used are North-South orientation of the dwellings in order to receive the most direct sun, overhangs or “galerias” to the South for shade, parallel high windows for cross ventilation to increase air movement in the interior of the house, and the use of deciduous trees, to provide shade during the summer on the East, South and West sides of the units.

The idea of using core modules in the design of the units is to make the dwellings more adaptable to different groups of people. Also the modules can be used within different climates, and building systems, so that diverse design alternatives could be considered. These modules could be totally manufactured or they can be built in-situ with a variety of materials such as concrete blocks, bricks and or traditional wood framing, or manufactured. In this thesis the construction system chosen is advanced wall framing on a slab foundation because it is economical, thermally efficient and easy to build.

7.5 FLEXIBILITY AND ADAPTABILITY

A vital element in the design of housing units is that...
they must be flexible enough to accommodate the changing needs that MFWs have every year. This is especially true regarding the numbers of bedrooms that can be modified in a simple way according to the population of MFWs that migrate to central Illinois every year. To solve this design challenge, the design uses a series of movable, thermal and acoustic insulated panels. These are sliding and folding panels that allow the space to be transformed (Fig. 7.13, Figure 7.13. Sliding panels. Used to divide bedrooms. Central panel with two sliding panels that can move in either direction to enter the bedroom)
7.14). The bedroom modules units can be transformed into one large bedroom or two bedrooms that can be part of the same unit, or each room can be part of a different unit (Fig. 7.12) these graphics show the forms of the dividers of the bedrooms. Panels that can be folded into a “u-shape” are another type of panels used in the design of the units. These folding panels will be used especially in the

Figure 7.14. Folding panels. Used for storage area. The panels can be stored without consuming space. The unfolded panel is 4’ x 8’, with a central part of 4’x8’ and the folding sides of 2’ x 8’
bedrooms as places for storage by placing plastic shelves in the “u-shape”. In addition, the use of built-in furniture adds to the design since residents minimize their expenses associated with furniture. This type of furniture includes benches that can also be used as a storage bin and wall-furniture.

The other types of built-in furniture in these units are a shelf in the bedrooms and in the dining room and wall-furniture. The wall shape provides benches to the interior and exterior sides of the wall (Fig. 7.15).

Figure 7.15. Wall-furniture. The wall shape creates the space for benches.
CHAPTER 8

PROPOSED DESIGN

8.1 SITE PLAN ...................................................................................................................157
8.2 NEIGHBORHOODS ....................................................................................................160
8.3 HOUSING UNITS ......................................................................................................164
8.4 HOUSING UNITS PLANS ........................................................................................169
  8.4.A. UNIT I ....................................................................................................................169
  8.4.B. UNIT II ..................................................................................................................171
  8.4.C. UNIT III ................................................................................................................173
  8.4.D. UNIT IV ...............................................................................................................175
8.5 DETAILS AND PICTURES ..........................................................................................177
8.1 SITE PLAN

As discussed in chapter 7, the site plan is divided into two major areas: the public and the residential. These areas are independent, but at the same time they are integrated into the complex and interconnected (Fig. 8.1, 7.5) through a network of pedestrians walkways that connect “plazas”, courtyards and community spaces.

The public areas are accessible from Murray Street, while the residential has two access ways on the North side from the Country Road 299. In the final design the public zone has two distinct parking lots (in a L-shape design), one for the daycare and the other for the community center (Fig. 8.2). The design of the parking lot allows that they can serve as overflow for each other. This minimizes the use of pave surfaces, increasing project more affordability. A separated entrance by Murray street is designed for the school bus and children drop-off and pickup of children (Fig. 8.2). In the design, the daycare is placed at the north of the public areas. The landscape defines a space for the daycare’s play areas that is secure and private (Fig. 8.2).

There are two internal streets, located east and west of the residential area. Each street accesses two neighborhoods. Parking lots are located adjacent to the streets between the neighborhoods (Fig. 8.2). These streets have pedestrian crossings in which the texture of the pavement is modified to alert drivers to reduce speed.

The public area is open to residents and non-residents of the complex because this area houses services for MFWS such as daycare, social, health and educational services and sports. The community center is strategically placed in the middle of the public area between the daycare and sport fields. This is designed to make the community center more accessible from different areas of the complex. For example lockers for people using the sport facilities are located in the community center. In the same fashion, if there is a large activity planed for the daycare it can be accommodated at the community center. In front of the main entrance of the community center there is a plaza “la plaza”, which is the main plaza of the complex. This plaza is
designed for large gatherings planned for residents as well as for the entire community, such as the annual harvest festival. In addition, this plaza provides an expansion space for the community center. It is important to note that “la plaza” is also connected by walkways to the “la placita” located in the middle of the four neighborhoods (Fig. 8.2).

For a detail description of the Public area facilities see appendix E.

Figure 8.1. Site plan organization
Figure 8.2. Site plan scheme of open public and community areas. Public plazas are in orange. Residential courtyards or patios are in green. Each neighborhood is like a Family-home, with a central patio.
8.2 Neighborhoods

The residential area is divided into four neighborhoods, each with their own name that represents an important part of the migrant lifestyle and work in Illinois. The names that have been chosen for the neighborhoods are “La Espiga” (detaching), “La Maicera” (corn harvest), “La Calabaza” (pumpkin harvest) and “la Familia” (the family). Figure 8.3 shows “La Espiga” neighborhood. It has a pedestrian entrance with a boulevard that meets requirements for fire truck access (minimum of 10 feet wide circulation). Therefore, if is necessary, a fire truck can have access to each neighborhood’s central patio, and from there any of the units can be reached. Each neighborhood’s pedestrian entrance has a pergola that frames the entry, giving the neighborhood personality and sense of definition. Besides the pergola at the entrance, there is also a central pergola. The central pergola is a space for barbequing, socializing, and or simply enjoying each other’s company. The toddler’s playground surrounds this central pergola, thus caregivers can supervise kids while they BBQ or do other activity (Fig. 8.5). The playground is depressed two steps. The idea of sinking the playground is to reduce noise level and use the steps as a seating area.
One of the main design criteria of the project discussed in chapter 7 is developing a community environment. Facilitating neighbors’ interaction and pedestrian circulations within different scale of common areas allows people to meet, and socialize. In this way, little by little a relationship between the neighbors is established that is an important condition to create a community environment (Fig. 8.6).

Housing units are organized in neighborhoods of 20 units each one. In each neighborhood units surround a central courtyard - the neighborhood’s “patio”- from which dwellings are accessed. (Fig. 8.8, 8.9, 8.10)

There are four unit models. Models I, II, and III have one floor level and are designed for families with children because is easier to supervise children and accommodate everyday family’s activities at ground level. Model IV has two floor levels. This model is designed for single men, and is located on the north side of each neighborhood, so that the taller buildings do not shade the interior of the court. Figure 8.7 reveals the relationship of the spaces between housing units, entrances, pergolas, sidewalks and landscape.

Figure 8.6. Neighborhood different scale open areas, for different activities

Figure 8.7. Section of the neighborhood entrance boulevard, showing the relationship between housing units, landscape, porches, “ galerías” and lighting
Figure 8.8 Neighborhood Site plan

Figure 8.9 La Espiga model view

Figure 8.10 La Espiga central courtyard
8.3 HOUSING UNITS

As outlined in chapter 7, the final design of the units uses a combination of basic modules. Two types of modules are used: the living (wet modules) and the sleeping (dry modules) modules (Fig. 8.11). As results of different modular arrangements, four housing archetype are presented in this thesis. In this way, it is possible to have a variable number of bedrooms according to the needs of the group of MFW that migrate to Central Illinois each season. Basically, the models are two attached units that can have from one to four bedrooms.

Also, there is a single unit (unit III) that always has 4 bedrooms and is larger than the other three models where the living module used is larger responding to the needs of larger households with a larger number of people. The modules used in units I, II, and IV are the same except for unit IV is a two floor building, with two units in each floor.

Figure 8.11 Unit I, showing the “living” & “sleeping” modules. The plan shows in red the sliding panels, and in yellow the space created by the folding panels.
The living module is 28 by 18 feet where the kitchen/dining area is 18 by 12 feet (Fig. 8.12). In the final design, and based on the research data about needs of MFW (see chapter 3), the living room area is reduced to favor the kitchen, bathroom and bedrooms since these areas are
intensely used. The kitchen and the bathroom share a plumbing wall; built-in furniture with shelves that can be used for storage, or as an entertainment center and desk is in the opposite wall. The dining area has space for an adjustable dining table, and the walls facing north and south have windows for efficient use of natural light and cross ventilation (Fig. 8.12).

The front wall, where the entrance to each unit is located, acts as built-in furniture since this wall has built-in benches with underneath storage space that can be use for general setting. This wall is folded in a way that half of the bench is outside in the galleria and the other half facing inside. In the porch, the bench next to the front door is especially designed for shoe changing after working in the fields. In addition, there is a closet for storing working shoes and clothes (Fig. 8.12). An important component of this design is the dwelling’s exterior spaces that are part of the living space. On the front side of the unit, a large galleria, with columns, creates an outside living space that provides shade and privacy. The main entrance is defined by a pergola, which creates a “greeting” space and adds personality to the house. Also, along the side of the pergola there are 3 feet high planters with a sitting edge. The same planters are repeated in the back patio. The back patio is accessed from the dining area extending it to the outside. The pergola is covered with a deciduous climbing vine, which gives shade in summer, and allows sun in winter, and defines the space (Fig. 8.12). Also, in this patio a storage room is placed where MFW can store diverse items they need to carry during the migration season.

The bathroom is a critical area of the unit since it is heavily used after a workday. For this reason, the bathroom is divided into three zones: sink, toilette and shower that can be used simultaneously and privately by three people. The three zones are created by sliding panels that allow the bathroom to transform into one, two or three compartments as described above. In addition, these types of panels allow adapting the bathroom to the ADA requirements.
In the living module, high windows, an important feature of the passive ventilation system, are designed to improve air circulation and decrease the thermal loading of the house by removing the upper warmer air. In the same way, in wintertime the windows allow the sun to heat the house. This design makes the units more affordable by reducing the use of energy. Another characteristic of the living module is high ceilings with exposed rafters that respond to the traditional Hispanic rural home style.

The bedroom modules are an open floor plan with windows on the North and South walls to provide cross ventilation. The number and size of the bedroom can be modified by the use of three-layer sliding panels (Fig. 8.13). By moving the panels in either direction from a central position the open floor plan can be transformed into one large bedroom for five beds or into two separate rooms. These two bedrooms have the option (moving the sliding panels) to be part of the same unit or each one belongs to separate unit (Fig. 8.8) (This is the case in units I, II and IV). Consequently, the dwellings can be adaptable to different family sizes. Another piece of movable furniture is a “U-Shape”
folding panel. These panels when unfolded are 8 by 8 feet. They can be folded in a U-shaped with the central part of 4 feet and the two sides of 2 feet respectively to create storage space (Fig.8.12). The bedroom module has an internal flat ceiling to provide privacy for each bedroom. The roof structure is made with wood trusses.

The research (see chapters 2 & 6) revealed the need to have floor surfaces that will be easy to clean, durable and low cost and easy to maintain. For these reasons, the final design has red or gray polished concrete for interior floors, and concrete composite with different patterns for exterior floor surfaces. Red asphalt tiled roof, warm colored stucco and colorful pergolas in the entrances individualize and add cultural meaning to the houses. Figure 8.14 shows an interior view of the living module, from the dining room to the seating area.

Figure 8.14. Interior view of the living module
8.4. HOUSING UNITS PLANS - 8.4.A. UNIT I

Option A
Two 3-bdrm units
968 sq. ft. each

Figure 8.15. Unit I Floor Plan A- Two 3-bdrm unit

Figure 8.16. Unit I front view

Figure 8.17. Unit I Section

Figure 8.18. Cross section. Living module
8.4. A. UNIT I

Figure 8.18. Unit I Back patios with pergola aerial view

**8.4 A UNIT I - Option B**

**One 2-bdrm unit**
- 800 sq. ft &

**One 4-bdrm unit**
- 1130 sq. ft =

**FLOOR PLAN**
1. Entry
2. Kitchen
3. Bedroom
4. Wall furniture
5. Bench
6. Patio
7. Storage
8. Bathroom

**Figure 8.20. Unit I Floor Plan B - One 3/4 bdrm unit & One 2-bdrm unit**

**ELEVATION**
1. Asphalt tile
2. Double glass window
3. Stucco
4. Bench
5. Storage
6. Planter

**Figure 8.21. Unit I Front Elevation**
UNIT II - Option A

One 3-bdrm unit
968 sq. ft.

One 1-bdrm unit
632 sq. ft.

8.4.B. UNIT II

8.4.B. UNIT III

Figure 8.22 Unit II Floor Plan - Option A One 3 bdrm unit & One 1-bdrm unit

Figure 8.23 Unit II section

Figure 8.24 Unit II patios view
8.4. B UNIT II - Option B

Two 2-bdrm units
800 sq. ft &

Figure 8.25. Unit II option B, Two 2-Bedroom units

Figure 8.26. Unit II, Front view

Figure 8.27. Unit II, Front elevation

Figure 8.28. Unit II, Back elevation
UNIT III

4-bdrm unit

1204 sq. ft &
8.4.C UNIT III

4-bdrm unit

1204 sq. ft.

Figure 8.32. Unit III B floor plan.. Two bedrooms & one large bedroom

Figure 8.33. Unit III front elevation

Figure 8.34. Unit III Back courtyard view, showing the storage room, and semiprivate patio
UNIT IV

8.4.D UNIT IV

8.4.D UNIT IV - Option A
One 3-bdrm unit
968 sq. ft.
One 1 bdrm unit
632 sq. ft.

UNIT IV - Option B
Two 2-bdrm unit
800 sq. ft.
8.5. DETAILS & PICTURES

Figure 8.40. Unit II. Roof plan

Figure 8.41. Detail rafter roof

Figure 8.42. Living module cross section

Figure 8.43. Wall section
Figure 8.44. Model of a neighborhood picture

Figure 8.45. Model Unit II

Figure 8.46. Interior of a courtyard, shows an area for small scale activities

Figure 8.47. Unit I. Side view
Figure 8.48  View of a pergola, in the back patio

Figure 8.49  Interior view of the living module
9.1. REFLECTIONS

At first glance, housing for migrant farm workers can be perceived as a matter of just providing a temporarily “shelter” where these people can live while they work in the fields. However, designing temporarily housing accommodations that are in agreement with the basic right that every human being has, to live in a house that is in accordance with his dignity, is a much more complex and challenging matter. As has been stressed in this work, MFWs have been subjected to substandard housing conditions and its derivative effects for a long time. Therefore, the main question of this research was “What is the best way to provide decent short-term housing for a specific population, who will use it every year while making it adaptable, economical and durable”. In order to respond to this challenge it was necessary to consider several issues such as cultural and socio-economic needs of MFW as well as concepts of sustainability such as efficient use of energy and building material. This research reveals that MFW value more the safety and the family-community environment than the physical conditions of the units. This does not mean that they do not appreciate decent accommodation; rather that these people know that if they are in a family-like environment they can create a solid network that allows them to rise above the difficulties created by inferior housing quality. They know that they are powerless to solve the housing condition problems but they can modify the human environment by networking and maintaining their cultural traditions and life style. Therefore, the design of temporary housing for families of MFWs must consider the culture of the people that will inhabit these units. This will add cultural meaning to their places giving a sense of security and stability to their lifestyle. They need to have a design that will promote social interaction and networking. In the design proposed in this thesis, Hispanic cultural elements were incorporated in the units so that these workers will identify themselves with the dwelling and develop a feel of home. Besides, detection of cultural patterns of space usage further
enhances MFW lifestyle and culture. Living spaces were designed to promote healthy family interaction, which respects the privacy and dignity of the occupants. Migrant workers have a distinct set of needs to which the design should respond. In this regard the design proposed in this thesis responds to these necessities; requiring this design to be different from a design for a housing complex visualized for seasonal farm workers that stay in Illinois during the whole year. To further promote a sense of belonging, safety and family like environment, the landscape also was designed with this purpose in mind by conceiving neighboring units that have their own space but at the same time are integrated into the whole. This work offers a series of guidelines for the design, not a merely temporary structure but instead a type of housing that not only is socio-culturally sound but also is sustainable from the point of view of energy usage, building materials and choice of construction systems.

As it is pointed out throughout this thesis, MFWs make a significant contribution to the U.S. society. Without them, many of the products that society takes for granted would not be available as we have them today. As a proverb said “we cannot love what we do not know”, thus it is important to integrate MFW housing into the rest of the community so that society can be more aware of migrant families and value their economic and cultural contributions that enrich the society as a whole.
9.2. AREAS FOR FUTURE RESEARCH AND DESIGN

This work identified research areas that are beyond the scope of this thesis. Nonetheless, it is important to briefly outline these areas to give a vision of the long-term research in temporary affordable housing.

As presented in chapter 5, modular structures are simple, easy to handle, affordable, and can be built with different materials. Modules offer the opportunity to combine them to create a variety of housing dwellings and buildings from single to multiple level units. Future research can explore how to use different basic modules to design multilevel, multifamily housing, how to make dwelling adaptations for other climates and/or population needs. Also, the possibility of constructing modules using different building systems and materials can be investigated. In this regard, the present research found that MFWs in many cases have construction experience using concrete blocks. Consequently, the possibility of using cement blocks to construct the modules and allowing migrant workers to be part of the construction crew can be considered. This strategy could have the advantage that the construction work will add an extra source of income for the MFWs and they will develop a sense of pride in the project.

Adaptability is important in making temporary housing serve its purpose. In this thesis built-in furniture and mobile paneling were added to the design to make the units more versatile and efficient in the usage of the space and storage. Future research in this regard can investigate different options to incorporate moving walls, panels, and furniture, and at the same time study different arrangements of wall-furniture to create a variety of spaces as it is proposed with the front wall of the living module in this work.
Another area of interest is to study more options in the use of passive systems in affordable multifamily housing using natural ventilation, orientation, shading, thermal mass of materials and landscape in order to make the dwelling more thermally comfortable and energy efficient. More research is needed to create a database of housing needs of migrant families and unaccompanied farmworkers in the entire state of Illinois. The result of this research should help non-profit and state institutions take into consideration this data concerning housing needs in particular areas when determining how and where to sponsor migrant farmworker housing.

9.3 CONCLUSION

Insufficient farmworker housing is a reality not only in Central Illinois but throughout the nation. The majority of housing facilities built are targeted for seasonal or for male unaccompanied farmworkers. These housing facilities are generally isolated from urban areas, but MFW traveling with their families need to live in a place with access to basic services such as health, education and social services. The data collected from surveys conducted with MFWs in Champaign County and the analysis of case studies agree with these facts, and provided further support for the decision to place the MFW complex in the Village of Rantoul. This city is centrally located to most MFW places of employment, and provides the majority of services available in Champaign County including education for their children.

The site chosen for the project was divided into two general areas, public and residential, which are all intercommunicated with a pedestrian network. This allows for social interactions and the creation of a community environment that facilitates residents perception of the place where they live as a safe environment especially for their children. The public
area houses all the social and educational services available for MFW residing in the complex as well as for seasonal and MFWs of the entire area of Central Illinois. The residential area was divided in four neighborhoods in order to facilitate the development of a “family” environment. A central patio or courtyard was designed in a way that all the main entrances of the units face it in order to promote resident awareness of their surroundings and encourage community interaction. The landscape was also designed having in mind the cultural characteristics of Hispanic farmworkers. Different places with a variety of scales are used to encourage diverse use of outside spaces by individuals, families or the entire community. To create these outside spaces for family and community gatherings that are very important in the lifestyle of MFW, the pergola and galeria were introduced as a Hispanic cultural element. For this reason, a pergola was designed for the central patio and to individualize and visually enhance the main entrance of each dwelling. Also, the pergola makes the transition between the “galeria” which is the semi-public area of the dwelling and the public area of the neighborhood. A pergola was also designed for the back of each unit, to create a semi-private space.

As part of a sustainable design approach, the use of a passive system was a design priority since the units were placed on site facing North-South, with the use of a pergola and the galeria for shading. Other elements of the passive system were also incorporated such as orientation, and cross and stack ventilation to make the units thermally comfortable and reduce the use of energy. Moreover, the advanced wall framing system was chosen because it is simple, easy to build, thermally efficient, and also efficient in the use of construction materials.

In summary, regardless of the origin and culture of those who are to live in a particular housing complex, the design should be sensitive to the cultural and social characteristics of its inhabitants, as well as to their physical necessities. This holistic design approach holds the key to make a house the “HOME” that we all want and deserve to have.


Hearings Before the Subcommittee on Workforce Protections of the committee on Education and the Workforce House of Representative Housing, one hundred sixth congress, first session. Serial No 106-78 Sess. (1999).


Housing and Urban Development. (2004b). Delivering Results from Colonias and farmworker communities.


Margolis, R. J. (1981). Homes on the Brave: a report on Migrant farmworker housing, Hearings before the Committee on Housing and Community Development.


Shipman, L., Bell, Brian. (2004). Figure 3.17. Hurricane resistant modular housing.


**TEXAS SECRETARY OF STATE**

**What is a colonia?**


**Government Code Definitions**

<table>
<thead>
<tr>
<th>Section 775.001 (2)</th>
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<tr>
<td><strong>Geographic</strong></td>
<td>Located in a county in which any part of that county is within 50 miles of the border</td>
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<tr>
<td><strong>Economic</strong></td>
<td>Economically distressed area as defined by Water Code Section 17.921</td>
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<tr>
<td><strong>Purpose</strong></td>
<td>Coordination of colonia initiatives (colonia initiatives coordinator and colonia ombudsmen program)</td>
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<table>
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<tr>
<th>Section 2306.581 (1)</th>
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<td><strong>Economic</strong></td>
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<td></td>
<td>• Federal poverty index AND</td>
</tr>
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<td></td>
<td>• Meets the qualifications of an economically distressed area from Water Code 17.921</td>
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<tr>
<td>Purpose</td>
<td>Establishment of colonia self-help centers to assist in the financing and construction of safe and suitable housing.</td>
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<td><strong>Economic</strong></td>
<td>Water or wastewater services are inadequate AND average household income is less than the average household income in that county.</td>
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<tr>
<td><strong>Purpose</strong></td>
<td>Permit coordination of water/wastewater outreach efforts by the colonia initiatives coordinator.</td>
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<td><strong>Section 43.907 (a) - Colonia</strong></td>
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<td><strong>Purpose</strong></td>
<td>To allow continued eligibility for colonia assistance for five years after annexation by municipality.</td>
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## Water Code Definitions

### Section 15.001 (12) - Nonborder Colonia

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### Section 15.951 (2) - Colonia

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<tr>
<td>Purpose</td>
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</tr>
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<td>State and Federal Agency Definitions of a &quot;Border County&quot;</td>
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</tr>
<tr>
<td>---------------------------------------------------------</td>
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<td><strong>U.S.D.A. Rural Development</strong></td>
<td></td>
</tr>
<tr>
<td>150-mile border region for colonia funding.</td>
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</tr>
<tr>
<td><strong>U.S. Housing and Urban Development</strong></td>
<td></td>
</tr>
<tr>
<td>150-mile border region for colonia funding.</td>
<td></td>
</tr>
<tr>
<td><strong>U.S. Environmental Protection Agency</strong></td>
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</tr>
<tr>
<td>100-kilometer (62 miles) border region for all border-related funding.</td>
<td></td>
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<tr>
<td><strong>Texas Water Development Board</strong></td>
<td></td>
</tr>
<tr>
<td>100-kilometer border region if using U.S. EPA funding and a 50 mile zone if utilizing state appropriated funds.*</td>
<td></td>
</tr>
<tr>
<td><strong>Texas Department of Housing and Community Affairs</strong></td>
<td></td>
</tr>
<tr>
<td>150-mile border region due to funding from U.S. Housing and Urban Development.</td>
<td></td>
</tr>
<tr>
<td><strong>Office of Rural and Community Affairs</strong></td>
<td></td>
</tr>
<tr>
<td>150-mile border region due to funding from U.S. Housing and Urban Development.</td>
<td></td>
</tr>
</tbody>
</table>

*Colonia funding originates from the Economically Distressed Areas Program (EDAP) which is a statewide program despite the vast majority being utilized in the 100-kilometer zone.
The General Assembly's Illinois Administrative Code database includes only those rulemakings that have been permanently adopted. This menu will point out the Sections on which an emergency rule (valid for a maximum of 150 days, usually until replaced by a permanent rulemaking) exists. The emergency rulemaking is linked through the notation that follows the Section heading in the menu.

- Section 935.10 Administration
- Section 935.15 Administrative Fines
- Section 935.20 Definitions
- Section 935.25 Incorporated and Referenced Materials
- Section 935.30 General Requirements
- Section 935.35 Permits
- Section 935.40 Camp Sites
- Section 935.50 Water Supply
- Section 935.60 Sewage Disposal
- Section 935.65 Required Sanitary Facilities
- Section 935.70 Food Preparation, Storage and Eating Facilities
- Section 935.80 Solid Waste Disposal
- Section 935.85 Electrical
- Section 935.90 Mechanical Equipment
- Section 935.100 Fire Protection
- Section 935.105 Communicable Disease Reporting
- Section 935.110 Exempt Establishments
- Section 935.120 Variances
- Section 935.130 Complaints

AUTHORITY: Implementing and authorized by the Illinois Migrant Labor Camp Law [210 ILCS 110].
Section 935.10 Administration

The administration of this Act is the responsibility of the Department of Public Health. The Act, along with this Part, provide for the licensing and regulation of migrant labor camps.

(Source: Amended at 14 Ill. Reg. 12633, effective July 20, 1990)

Section 935.20 Definitions

In addition to the definitions contained in the Illinois Migrant Labor Camp Law, the following definitions shall apply:

"Act" means the Illinois Migrant Labor Camp Law [210 ILCS 110].

"Community Water System" means a public water system which services at least 15 service connections used by residents or serves at least 25 residents for at least 60 days a year.

"Family" shall include the mother, father and dependent children under 18 years of age.

"Major Alteration" means the construction of a new potable water system, sewage disposal system, food service establishment, electrical distribution system or permanent sleeping structure.
“Major Extension” means an increase of ten percent or more in a one year period of the capacity of the potable water system, sewage disposal system, food service establishment, electrical distribution system or permanent sleeping structure.

“Non-Community Water System” means a public water system that is not a community water system, that has at least 15 service connections used by non-residents, or serves 25 or more non-resident individuals daily for at least 60 days a year.

“Public Water System” means a system for the provision to the public of piped water for human consumption, if the system has at least 15 service connections or serves an average of at least 25 individuals daily at least 60 days per year. The term Public Water System includes an collection, treatment, storage and distribution facilities under control of the operator of such system and any collection or pretreatment storage facilities not under such control which are used in connection with such system.

“Special Flood Hazard Area” means an area that would be inundated by the base flood and shown as such on either a Regulatory Flood Plain Map (published by the Illinois Department of Natural Resources), a Flood Insurance Rate Map or a Flood Hazard Boundary Map, both published by the Federal Insurance Administration or the Federal Emergency Management Agency.

(Source: Amended at 21 Ill. Reg. 9484, effective July 1, 1997)

Section 935.65  Required Sanitary Facilities

a) Toilets

1) A water closet, chemical toilet or privy seat shall be provided for each sex in the ratio of one for each 15 persons. (B)

2) Each toilet room shall be located so as to be accessible without any individual passing through any sleeping room. Toilet rooms shall have a window not less than 6 square feet in area opening directly to the
outside area or be provided with mechanical ventilation. All outside openings shall be screened with 16-mesh material. No fixture, water closet, chemical toilet, or urinal shall be located in a room used for other than toilet purposes. (C)

3) A toilet room shall be located within 200 feet of the door of each sleeping room. No privy shall be closer than 100 feet to any sleeping room, eating room, or kitchen. (C)

4) Where the toilet rooms are shared, such as in multifamily shelters and in barracks type facilities, separate toilet rooms shall be provided for each sex. These rooms shall be distinctly marked "Men" and "Women" by signs printed in English and in the native language of the persons occupying the camp, or marked with easily understood pictures or symbols. If the facilities for each sex are in the same building, they shall be separated by solid walls or partitions extending from the floor to the roof or ceiling. (C)

5) Where toilet facilities serve more than one family, the number of water closets or privy seats provided for each sex shall be based on the maximum number of persons of that sex which the camp is designed to house at any one time, with a minimum of two toilets for any shared facility. (C)

6) Urinals constructed of non-absorbent materials may be substituted for men's toilet seats on the basis of one urinal for one toilet seat up to a maximum of one-third of the required toilet seats. The floor from the wall and for a distance not less than 15 inches measured from the outward edge of the urinals shall be constructed of materials impervious to moisture. Urinal troughs in privies shall drain freely into the pit or vault and the construction of this drain shall be such as to exclude flies and rodents from the pit. (C)

7) Each toilet facility shall be provided with artificial lighting equivalent to one-half watt of incandescent light per square foot. (C)

8) Toilet facilities shall be clean and free of structural damage. (B)

9) Refuse containers shall be provided and emptied daily. (C)

b) Handwashing Facilities

1) One handwashing basin shall be provided for each family shelter or one for each six people or fraction thereof in shared facilities. (B)
2) Liquid or powdered soap shall be provided for each handwashing basin. Bar soap can be used when the basin is for family members only. (C)

c) Showers

1) There shall be a minimum of one showerhead with hot and cold running water per 10 persons or fraction thereof except that a minimum of one showerhead per 15 persons shall be provided for camps occupied prior to April 3, 1980. The showers shall be located within 300 feet of the housing unit. (B)

2) Showerheads shall be spaced at least 3 feet apart with a minimum of 9 square feet of floor space per unit. Dry dressing space shall be provided in shower rooms. Shower floors shall be constructed of non-absorbent, non-skid materials and sloped to a floor drain. The walls shall be smooth and impervious. Except in individual family units, separate shower facilities shall be provided for each sex. When shower facilities for both sexes are in the same building they shall be separated by a solid non-absorbent wall extending from the floor to ceiling, or roof, and shall be plainly designated "men" or "women" in English and the native language of the persons expected to occupy the housing, or marked with easily understood pictures or symbols. (B)

3) Showers shall be kept free of dirt and mildew. (C)

d) Laundry Facilities

Laundry facilities, supplied with hot and cold water under pressure, shall be made available for the use of all occupants. Laundry trays or tubs shall be provided in a ratio of one per 30 persons. Mechanical washers may be provided in a ratio of one per 50 persons in lieu of laundry trays, although a minimum of one laundry tray per 100 persons shall be provided in addition to the mechanical washers. (C)

(Source: Amended at 21 Ill. Reg. 9484, effective July 1, 1997)
a) Commercial Operations. If the food is prepared by someone other than the residents of the migrant labor camp, the facility shall be constructed and operated in accordance with the Food Service Sanitation Code (77 Ill. Adm. Code 750). (A)

b) Family Operations. If the food is prepared by the migrant workers or their family, the following shall be provided as a minimum:

1) One stove burner or hot plate burner shall be provided for every five occupants. (C)
2) Potable water and a basin shall be provided. (A)
3) Mechanical refrigeration for the food shall be provided. (B)
4) A counter for food preparation and shelves or cabinets for the storage of food shall be provided. All food contact surfaces shall be impervious, smooth, and free of breaks, open seams, cracks, chips, pits and similar imperfections. (C)
5) Tables and seating facilities shall be provided for each person. (C)
6) Floors in kitchen and dining areas shall be non-absorbent and smooth. The walls adjacent to food preparation, cooking and cleaning areas shall be smooth and non-absorbent. (C)

c) Separation. Food preparation and eating facilities serving more than one housing unit shall be located in a room or building separate from sleeping rooms or toilet rooms. (B)

d) Communicable Disease. Persons with communicable disease shall not be allowed to prepare or otherwise handle food for anyone other than themselves. (A)

(Source: Amended at 21 Ill. Reg. 9484, effective July 1, 1997)
The General Assembly's Illinois Administrative Code database includes only those rulemakings that have been permanently adopted. This menu will point out the Sections on which an emergency rule (valid for a maximum of 150 days, usually until replaced by a permanent rulemaking) exists. The emergency rulemaking is linked through the notation that follows the Section heading in the menu.

**SUBPART A: DEFINITIONS AND INCORPORATED MATERIALS**

- Section 860.10 Definitions
- Section 860.20 Incorporated and Referenced Materials

**SUBPART B: PERMITS**

- Section 860.100 Required Permits
- Section 860.110 Applications
- Section 860.120 Plans
- Section 860.130 Flood Plain Requirements
- Section 860.140 Occupancy of New Sites
- Section 860.150 Immobilization
- Section 860.160 Deletion of Sites

**SUBPART C: REQUIREMENTS OF THE MANUFACTURED HOME COMMUNITY**

- Section 860.200 Layout of the Manufactured Home Community
- Section 860.210 Support Systems
- Section 860.220 Streets and Parking
- Section 860.230 Water
- Section 860.240 Sewage
- Section 860.250 Electrical
• Section 860.260 Fuel Supply
• Section 860.270 Fire Safety
• Section 860.280 Lighting
• Section 860.290 Pools and Beaches
• Section 860.300 Solid and Landscape Waste
• Section 860.310 Manufactured Home Community Appearance
• Section 860.320 Identification of Sites
• Section 860.330 Vector Control
• Section 860.340 Fences
• Section 860.350 Inspection Doors
• Section 860.360 Recreational Vehicles
• Section 860.370 Animal Control
• Section 860.380 Vacant Sites
• Section 860.390 Duplex Units

SUBPART D: ADDITIONAL RESPONSIBILITIES OF THE LICENSEE

• Section 860.400 Required Documents
• Section 860.410 Manufactured Home Community Rules
• Section 860.420 Register
• Section 860.430 Inspections by Manufactured Home Community Management

SUBPART E: ADMINISTRATIVE ACTION BY THE DEPARTMENT

• Section 860.500 Variance Procedures
• Section 860.510 Enforcement Action
• Section 860.520 Common Operation
• Section 860.530 Existing Communities
• Section 860.APPENDIX A Regional Offices of the Department
• Section 860.APPENDIX B Explanation of the 1996 National Electrical Code Requirements for Manufactured Home Communities (Repealed)
• Section 860.APPENDIX C Unlicensed Motor Vehicles
• Section 860.APPENDIX D Home Rule Units
• Section 860.ILLUSTRATION A Manufactured Home Community Layout For Sites Constructed After July 1, 1998
• Section 860.ILLUSTRATION B Typical Manufactured Home Site
AUTHORITY: Implementing and authorized by the Mobile Home Park Act [210 ILCS 115].

• Section 830.100 License Application for Commercial Structural Pest Control Business Location
• Section 830.110 Registration Application for Non-Commercial Structural Pest Control Location
• Section 830.120 Application for Examination as a Certified Structural Pest Control Technician
• Section 830.130 Re-examination Applications
• Section 830.140 Application of Certified Technicians for Examination in Other Sub-categories
• Section 830.150 Processing (Repealed)
• Section 830.160 Approved Applications (Repealed)
• Section 830.170 Disapproved Applications (Repealed)
• Section 830.180 License and Registration Renewals
• Section 830.190 Change of Business Ownership
• Section 830.200 Certification Renewals
• Section 830.210 Late Filing Charge
• Section 830.220 Non-renewal of Technician Certificates
• Section 830.230 Certified Technician at Each Location
• Section 830.240 Change of Certified Technician at Place of Employment
• Section 830.250 Certificates of Insurance
• Section 830.260 Insurance Coverage
• Section 830.270 Supervision of a Non-certified Technician
• Section 830.280 Inspections and Investigations (Repealed)
• Section 830.290 Classification of Pesticides
• Section 830.300 Application for Certification in Illinois as a Structural Pest Control Technician by Reciprocity
• Section 830.310 Display of License, Registration and Certification
• Section 830.315 Procedures for Certification as a Structural Pest Control Technician in Wood Products Pest Control (Repealed)

SUBPART C: EXAMINATIONS

• Section 830.400 General Provisions
• Section 830.410 Examinations
• Section 830.420 Examination Schedules (Repealed)
• Section 830.430 Grades
• Section 830.440 Notification of Examination Results
• Section 830.450 Confidentiality of Examination Scores
• Section 830.460 Examinee's Review of Examination
SUBPART D: PEST CONTROL COURSES

- Section 830.500 Application
- Section 830.510 Application (Repealed)
- Section 830.520 Instructors
- Section 830.530 Pest Control Course Description
- Section 830.540 Record of Completion
- Section 830.550 Pest Control Course Evaluation
- Section 830.560 Approval (Repealed)
- Section 830.570 Disapproval of an Application or Recission of Approval (Repealed)

SUBPART E: PEST CONTROL TRAINING SEMINARS (RECERTIFICATION)

- Section 830.600 Application
- Section 830.610 Application (Repealed)
- Section 830.620 Instructors
- Section 830.630 Pest Control Seminars
- Section 830.640 Record of Completion
- Section 830.650 Pest Control Seminar Evaluation
- Section 830.660 Approval (Repealed)
- Section 830.670 Disapproval of an Application or Recission of Approval (Repealed)

SUBPART F: HEARINGS AND ADMINISTRATIVE FINES

- Section 830.700 Hearings
- Section 830.710 Administrative Fines

SUBPART G: SAFE PESTICIDE STORAGE AND HANDLING

- Section 830.800 General Safety Precautions
- Section 830.810 Misuse of Pesticides
- Section 830.820 Records
- Section 830.830 Pesticide Storage Area
- Section 830.840 Service Vehicles
- Section 830.850 Pesticide Storage Practices
- Section 830.860 Orders to Stop Sale, Stop Use, Seize or Regulate Removal
SUBPART H: BIRD CONTROL REQUIREMENTS

- Section 830.870 Hazardous Incident Notification and Abatement
- Section 830.880 Avicide Permit Requirements (Repealed)
- Section 830.885 Denial or Revocation of Avicide Permits (Repealed)
- Section 830.890 Bird Control Monitoring and Reporting Requirements (Repealed)
- Section 830.900 Bird Control Training Requirements (Repealed)

SUBPART I: GROUNDWATER PROTECTION

- Section 830.1000 Scope and Applicability
- Section 830.1100 Protection of Potable Water Supplies
- Section 830.TABLE A SCHEDULE OF ADMINISTRATIVE CIVIL FINES

AUTHORITY: Implementing and authorized by the Structural Pest Control Act [225 ILCS 235], Illinois Pesticide Act [415 ILCS 60] and in particular Sections 3.2 and 14.6 of the Environmental Protection Act [415 ILCS 5/3.2 and 14.6].

### Migrant Housing Interview Guide

#### 2003 Survey Outline for Migrant Housing Design

**Please, circle or write the answer**

<table>
<thead>
<tr>
<th>A</th>
<th>Migrant Work - Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What is the yearly cycle of movement for your family?</td>
</tr>
<tr>
<td>2</td>
<td>For how many years have you been coming to Illinois to work in the agricultural fields?</td>
</tr>
<tr>
<td>3</td>
<td>Where else do you go besides the Champaign/Rantoul area when you migrate to work?</td>
</tr>
<tr>
<td>4</td>
<td>Do you come from Texas? Yes / NO , or what other place?</td>
</tr>
<tr>
<td>5</td>
<td>Do you work elsewhere when you migrate? And in your permanent location?</td>
</tr>
<tr>
<td>6</td>
<td>What is your annual salary range, between (circle one)</td>
</tr>
<tr>
<td></td>
<td>less 5,000 5,000-10,000 10,000-15,000 15,000-20,000 25,000-30,000 30,000-35,000 more</td>
</tr>
<tr>
<td>7</td>
<td>Have you traveled with a different crew leader in other years?</td>
</tr>
<tr>
<td>8</td>
<td>How did you meet and know your crew leader?</td>
</tr>
<tr>
<td>9</td>
<td>How much cost to travel when you migrate to work?</td>
</tr>
</tbody>
</table>
## IN YOUR PERMANENT LOCATION

### B  HOUSING  in your permanent location

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Where do you live? State, City, neighborhood?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>What kind house is it? (Please circle one)</td>
<td>single family unit, manufactured home, town house, multifamily apartments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>affordable housing project, housing authority, other</td>
</tr>
<tr>
<td>3</td>
<td>What are the physical conditions? For example, how is the condition of painting, the floor, roof, etc</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Do you own your permanent house? Or rent?</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>How much it cost to you each month?</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Number of bedrooms, bathrooms, kitchen with dining, only kitchen living-dining, close laundry, garage</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Did you build your own house?</td>
<td>YES/NO</td>
</tr>
<tr>
<td>8</td>
<td>Did you remodel your house?</td>
<td>YES/NO</td>
</tr>
<tr>
<td>9</td>
<td>Which areas?</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The place where do you live have outside spaces (green areas) for entertainment and interaction?</td>
<td>YES/NO</td>
</tr>
</tbody>
</table>

### C  FAMILY  in your permanent location

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What is your household composition?</td>
<td>How many adults: and how many kids:</td>
</tr>
</tbody>
</table>
2. Do you live in extended families? (circle the ones who correspond.)
   - Your: spouse
   - son/daughter
   - dad/mom
   - brother/sister
   - grandpa/grandma
   - uncle/aunt
   - cousins
   - other

3. Does extended family members live close by?
   - YES/NO

4. How far do they live?

5. If so what happens to the other members of the extended family when you come to Illinois to work?

6. Do you have close friends who live near you and travel with?
   - YES/NO

### HOUSE & HOME in your permanent location

1. Do you feel your house as your “home”?
   - YES/NO

2. How secure do you feel is your house inside and outside? (circle)
   - very
   - little
   - none

3. What do you think is the area of your house the most inadequate or need improvement?

4. How that affects your family the most and/or as individual?

5. In your house what are the features of a house that you most value
   - For ex: laundry
   - number of bath
   - number of bedrooms
   - other

6. Do you feel that where you live now (Please, circle the answer)
   - help your family to interact in a healthy manner
   - or does it promote conflict among family members?

7. How do you feel the housing/living conditions impact your children?
Very good  good  not good  bad

<table>
<thead>
<tr>
<th></th>
<th>It is important to you to have:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td><strong>a private patio?</strong> Y/ N</td>
</tr>
<tr>
<td></td>
<td><strong>More than one bathroom</strong> Y/ N</td>
</tr>
<tr>
<td></td>
<td><strong>Separate bedrooms for parents and kids</strong> Y/ N</td>
</tr>
<tr>
<td></td>
<td><strong>Living Rm and Dining Rm together</strong> Y/ N</td>
</tr>
<tr>
<td></td>
<td><strong>Laundry</strong> Y/ N</td>
</tr>
<tr>
<td></td>
<td><strong>One kitchen per unit</strong> Y/ N</td>
</tr>
<tr>
<td></td>
<td><strong>Garage</strong> Y/ N</td>
</tr>
</tbody>
</table>

### E NEIGHBORHOOD in your permanent location

<table>
<thead>
<tr>
<th></th>
<th>What type of interaction do you have with your neighbor?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very good  good  bad  none</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>What is the ethnic composition of your neighborhood?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>White  black  latin  asian  mixed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Do you feel that your house is integrated to the rest of the neighborhood?</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>YES/NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>It is your neighborhood integrated to the surrounding communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>YES/NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Does the place do you live now encourage community interaction in a safety manner?</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>YES/NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How important is to have a playground in the area?</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>YES/NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>What type of service are close by to your neighborhood. Please circle:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Hospital, public school, transportation, groceries, recreation places, parks, public services (WIC, Food Stamps), Library, other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>What services do you consider the most important to be close by in your neighborhood?</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>What type of transportation do you use?</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>
### 2003 MIGRANT FARMWORKER SURVEY

#### APPENDIX D

### F HOUSING in Illinois

<table>
<thead>
<tr>
<th></th>
<th>Own relatives friends public other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AS A MIGRANT IN ILLINOIS</strong></td>
<td></td>
</tr>
<tr>
<td><strong>F HOUSING in Illinois</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Where do you live in Illinois? (circle one) Champaign Urbana Rantoul other</td>
</tr>
<tr>
<td>2</td>
<td>Where is it located in the city?</td>
</tr>
<tr>
<td>3</td>
<td>What kind house is it? Please circle one single family unit, manufactured home, town house, multifamily apartments, affordable housing project, housing authority, other</td>
</tr>
<tr>
<td>4</td>
<td>What are the physical conditions? For example, how is the condition of painting, the floor, roof, etc.</td>
</tr>
<tr>
<td>5</td>
<td>Do you (circle one): own the house rent live with somebody the job provide the house</td>
</tr>
<tr>
<td>6</td>
<td>How much it cost to you each month?</td>
</tr>
<tr>
<td>7</td>
<td>Number of bedrooms, bathrooms, kitchen with dining, living-dining, laundry</td>
</tr>
<tr>
<td>8</td>
<td>Did you build your own house in IL?   YES / NO</td>
</tr>
<tr>
<td>9</td>
<td>The place where do you live have outside spaces (green areas) for entertainment and interaction? YES</td>
</tr>
</tbody>
</table>
### G FAMILY in Illinois

1. **What is your household composition?**
   - How many adults: __________ and how many kids: __________

2. **Do you live in extended families? (circle the ones who correspond.)**
   - Your: spouse, son/daughter, dad/mom, brother/sister, grandpa/grandma, uncle/aunt, cousins, other

3. **Does extended family members live close by?**
   - YES / NO

4. **How far do they live?**

5. **How do you think the migrant work impacts the lives of your children?**
   - Very good, good, bad

### H HOUSE & HOME in Illinois

1. **Do you feel your house as your “home”?**
   - YES / NO

2. **How secure do you feel is your house inside and outside? (circle)**
   - very, little, none

3. **What do you think is the area of your house the most inadequate or need improvement?**

4. **How that affects your family the most and/or as individual?**

5. **In your house what are the features of a house that you most value (laundry, bath, bedrooms, etc)**
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6</strong></td>
<td>Do you feel that where you live now help your family to interact in a healthy manner or does it promote conflict among family members? Please, circle the answer</td>
</tr>
<tr>
<td><strong>7</strong></td>
<td>How do you feel the housing/living conditions impact your children? Very good good not good bad</td>
</tr>
<tr>
<td><strong>8</strong></td>
<td>It is important to you to have: a private patio? More than one bathroom Separate bedrooms for parents and kids Living Rm and Dining Rm together Laundry One kitchen per unit Garage</td>
</tr>
</tbody>
</table>

### NEIGHBORHOOD in Illinois

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>What type of interaction do you have with your neighbor? Very good good bad none</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>What is the ethnic composition of your neighborhood? White black latin asian mixed</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>Do you feel that your house is integrated to the rest of the neighborhood? YES / NO</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>It is your neighborhood integrated to the surrounding communities YES / NO</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Does the place do you live now encourage community interaction in a safety manner? YES / NO</td>
</tr>
<tr>
<td></td>
<td>Question</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>How important is to have a playground in the area?</td>
</tr>
</tbody>
</table>
| 7 | What type of service are close by to your neighborhood: 
Migrant clinic, Migrant Council, Hospital, public transportation, groceries, 
recreation places, parks, public services (WIC, Food Stamps), school, other |
| 8 | What services do you consider the most important to be close by in your neighborhood? |
| 9 | What type of transportation do you use? 
Own relatives friends public other |
| 10| It is important to you to have a community center in the neighborhood where you live in IL? | YES/NO |
## Migrant Farmworker Housing Complex

<table>
<thead>
<tr>
<th>Space #</th>
<th>Space</th>
<th>Open SF</th>
<th>Unit NSF</th>
<th># UNITS</th>
<th>NSF</th>
<th>Work Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0.0</td>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0.1</td>
<td>Offices</td>
<td>120</td>
<td>5</td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0.2</td>
<td>Reception</td>
<td>150</td>
<td>1</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0.3</td>
<td>Storage</td>
<td>80</td>
<td>1</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.0</td>
<td>Community Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.1</td>
<td>Kitchen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.2</td>
<td>Storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.3</td>
<td>Meetings and education Room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.4</td>
<td>Room for classes</td>
<td>600</td>
<td>3</td>
<td>###</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.5</td>
<td>Library</td>
<td>300</td>
<td>1</td>
<td>300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.6</td>
<td>Computer Lab</td>
<td>300</td>
<td>1</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.7</td>
<td>Social services offices</td>
<td>200</td>
<td>4</td>
<td>800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.8</td>
<td>Bathrooms</td>
<td>300</td>
<td>2</td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.9</td>
<td>Men's Lockers/Showers/Toilets</td>
<td>120</td>
<td>1</td>
<td>120</td>
<td>4 Lockers</td>
<td></td>
</tr>
<tr>
<td>2.1.10</td>
<td>Women's Lockers/Showers/Toilets</td>
<td>120</td>
<td>1</td>
<td>120</td>
<td>4 Lockers</td>
<td></td>
</tr>
<tr>
<td>2.1.11</td>
<td>Mechanical Rm</td>
<td>500</td>
<td>1</td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## PROGRAM OF DESIGN

### NET SQUARE FEET

| 2.1.12 | Parking | 8,200 | 410 | 20 |
| 2.1.13 | Open patio | 1 |
| **NET SQUARE FEET** | | | | 6,490 |

### Day Care MHS

| 2.2.1 | Office | 100 | 4 | 400 |
| 2.2.2 | 4 Classrooms | 560 | 4 | 2,240 |
| 2.2.3 | Big hall | 1 | 400 |
| 2.2.4 | Kitchen | 300 | 1 | 300 |
| 2.2.5 | Meeting room | 400 | 2 | 800 |
| 2.2.6 | Restrooms | 200 | 2 | 400 |
| 2.2.7 | Mechanical Rm | 200 | 1 | 200 |
| 2.2.8 | Storage | 200 | 2 | 400 |
| 2.2.9 | open Play areas | 3,825 |
| Parking | 8,200 | 410 | 20 |
| **NET SQUARE FEET** | | | | 5,140 |

### OUTDOOR

| 2.3.1 | Central playground | 2000 |
| 2.3.2 | plaza | 1800 |
| 2.3.3 | Sports field | 29,400 |
| **Total Open Public area** | 33,200 |

### Outdoor: Residential Area

| | Playground area toddlers | 4 | 450 | 1800 |
| | BBQ / social area | 4 | 400 | 1600 |
| | Line clothing area | 4 | 120 | 480 |
| | Play area | 4 | 500 | 2000 |
| **parking** | 410 | 90 | 36900 | 36900 |

**Total housing open areas** | 42180
### Private Areas

<table>
<thead>
<tr>
<th>MFW Housing Units</th>
<th>Sq Ft</th>
<th>#</th>
<th>Subtotal</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One bedroom</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinning area</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Rm</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom 1</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bath</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porch-semi patio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL ONE BEDROOM</strong></td>
<td>540</td>
<td>2</td>
<td>1,080</td>
<td>4,320</td>
</tr>
<tr>
<td><strong>Two bedrooms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinning area</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Rm</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom 1</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom 2</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bath</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porch-semi patio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL TWO BEDROOMS</strong></td>
<td>730</td>
<td>12</td>
<td>7,760</td>
<td>35,040</td>
</tr>
<tr>
<td><strong>Three bedrooms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinning area</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Rm</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom 1</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom 2</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom 3</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bath</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Half-bath</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porch-semi patio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL THREE BEDROOMS</strong></td>
<td>900</td>
<td>5</td>
<td>4500</td>
<td>18,000</td>
</tr>
</tbody>
</table>

### Semi Public Residential Areas

| Indoor: Laundry: Four washers & dryers / 20 units | 4 | 324 | 1296 |
| Storage | 4 | 120 | 480 |

**Total Housing Net Square Feet** | 20 | 14,416 | 61,664 |

**Grossing Factor 0.67/1.5**

**Total Gross Housing Square Feet** | 91,777 |

**Total Public Area Square Feet** | 16,101 |

**Total Gross MFW Housing Complex Square Feet** | 107,878 |
CHAPTER 27

ZONING

Sec. 27.1 Notice of Previous Adoption of Zoning Ordinance.

That the provisions of Ordinance No. 1300 known as "Rantoul Zoning Ordinance - 1991" and all amendments made thereto shall remain in full force and effect.
VILLAGE of RANTOUL R-2 & R-3 ZONING REGULATION

APPENDIX F

TITLE VII

R-2 RESIDENTIAL DISTRICT

SECTION

SUBJECT

1. INTENDED PURPOSES
2. USE REGULATIONS
3. HEIGHT REGULATIONS
4. AREA, WIDTH AND YARD REGULATIONS
5. BUILDING SIZE
6. DETACHED GARAGES
7. OFF STREET PARKING
8. SIGNS

SECTION 1. INTENDED PURPOSES

The general character of these residential districts is to consist of single family detached dwellings, set on medium size lots. Nonresidential uses would be restricted to those community facilities which:

A. May appropriately be located in residential areas to serve educational needs or to provide other essential services for the residents, or

B. May appropriately be located in residential areas to provide recreational, religious, health and other essential services for residents, or

C. Can perform their activities more effectively in a residential environment, unaffected by adjacent industrial or general service uses, and

D. Do not create significant objectionable influences in residential areas.

In "R-2" Residential Districts, the following regulations shall apply.

SECTION 2. USE REGULATIONS

A building may be erected, altered, or used, and a lot may be used or occupied, for any of the following purposes:

A. Permitted Uses

1. Single family detached dwelling units.

2. Home occupations as regulated in Title XVI Section 14.


4. Schools, non-boarding - elementary, junior and senior high.

5. Signs in accordance with the regulations contained in Title XIX Section 2.

6. Accessory uses to the previously listed permitted uses.

7. Family Community Residence where the residence or operator is licensed or certified by the appropriate state or local agency (and where the lot line of the proposed residence is at least 500 feet from the lot line of any existing community residence).

3. Special Uses

1. Special Uses as allowed in R-1 Residential District, except for single family attached dwellings which shall be as follows:

Single family attached dwellings - Two single family attached dwellings may be constructed on large lots with at least 90 feet of width at the building line and with a lot area of not less than 10,800 square feet. Single story dwelling units shall have at least 1080 square feet of living space and two story units shall have at least 1200 square feet of living space with 600 square feet on the ground floor of both single story and two story units, exclusive of enclosed porches, terraces, and garages. Each dwelling unit shall be completely separated by a sound proof separation wall or walls having the fire resistive ratings specified by the BOCA Basic Building Code. Each dwelling unit shall also have an independent heating, electrical, water and wastewater system with separate meters for each.

After construction is completed, the owner may subdivide the lot into two smaller lots, creating separate ownership in each dwelling unit, provided that each lot shall have at least 45 feet at the building line and at least 5000 square feet of area. Also, all other regulations in the R-2 Residential District shall apply to each of the two new lots, such as the front yard setback requirement, the rear yard setback requirement, the height and building coverage standards, the off street parking requirement, and sign regulations.

2. Group Community Residences.

3. Halfway House and Hospice.
4. Bed and Breakfast, not to exceed three bedrooms and or six (6) overnight guests.

5. Family Community Residence proposed to be located within 500 feet, as measured from lot line to lot line of any existing community residence or for which the state does not require a license.

SECTION 3. HEIGHT REGULATIONS

The maximum height of buildings and other structures erected or enlarged in this district shall be:

A. For any dwelling 35 feet, not exceeding 2-1/2 stories;
B. For any building accessory to any dwelling use, 14 feet, not exceeding 1 story;
C. For any other nonresidential building or other structure, 35 feet, except that such height may be increased to a maximum of 65 feet provided that for every foot of height in excess of 35 feet there shall be added to each yard requirement one corresponding foot of width or depth.

SECTION 4. AREA, WIDTH AND YARD REGULATIONS

A. Minimum Lot Area and Width: A lot area of not less than 6,000 square feet and a lot width of not less than 50 feet at the building line shall be provided for a single family dwelling.

B. Front Yard: There shall be a front yard between the building line and the highway or street right-of-way of 25 feet.

C. Side Yards:
   1. On each interior lot, there shall be two side yards having an aggregate width of not less than 10 feet, and neither side yard having a width of less than five (5) feet.
   2. On each corner lot, there shall be two side yards, the side yard abutting the street having a width of not less than 25 feet, and the side yard not abutting the street having a width of not less than five (5) feet.
   3. On any lot, in any side yard not abutting a street, a detached private garage may be erected and maintained. The garage shall not be closer than ten (10) feet from the rear lot line nor closer than two (2) feet from the side lot line.

D. Existing Building Extensions: The side yard limitations shall not apply to the extension of any existing residence, either into the front yard or into the back yard as long as such extension is a continuation of the side of the existing structure. The extension permitted by this section shall not reduce the side yard width as it exists prior to the extension.

E. Rear Yard: There shall be a rear yard on each lot, the depth of which shall be not less than 20 feet, except that a garage structure may be erected within the rear yard not closer to the rear property line than ten (10) feet and all other types of accessory use structures may be erected within the rear yard not closer to the rear property line than two (2) feet.

F. Building Coverage: Not more than 30 percent of the area of any lot shall be occupied by buildings.

SECTION 5. BUILDING SIZE

No building shall be erected for residential purposes having a ground floor area of less than 680 square feet for a single story dwelling, or ground floor area of less than 680 square feet if more than one story, exclusive of unenclosed porches, terraces, and garages.

SECTION 6. DETACHED GARAGES

A private detached garage may not exceed 26 feet deep by 30 feet in width.

SECTION 7. OFF STREET PARKING

Off street parking requirements will be in accordance with the provisions set forth in Title XVIII of this ordinance.

SECTION 8. SIGNS

Sign requirements will be in accordance with the provisions of Title XIX of this ordinance.
VILLAGE of RANTOUL R-2 & R-3 ZONING REGULATION

TITLE VIII

R-3 RESIDENTIAL DISTRICT

SECTION 1. INTENDED PURPOSES

The general character of this residential district is to consist of single-family detached dwellings and Duplex Dwellings, with some higher density under special conditions, set on medium size lots. Nonresidential uses would be of similar character as those in "R-2" Residential District. In the "R-3" Residential District, the following regulations shall apply:

SECTION 2. USE REGULATIONS

A building may be erected, altered or used, and a lot may be used or occupied, for any of the following purposes:

A. Permitted Uses

1. A use permitted in the "R-2" Residential Districts.

2. Duplex Dwellings, provided that each attached dwelling unit shall be separated from the other by a sound proof fire separation wall having the fire restrictive rating specified by the BOCA Basic Building Code and shall have independent heating, electrical, water and wastewater systems with separate

meters for each.

3. Accessory uses.

4. Group Community Residences where the residence or operator is licensed or certified by the appropriate state or local agency and where the lot line of the proposed residence is at least 500 feet from the lot line of any existing community residence.

B. Special Uses

1. Special uses allowed in "R-2" Residential Districts.

2. Planned Unit Developments of not less than 200,000 square feet in accordance with the provisions of Title XX of this Ordinance.

3. Halfway House and Hospice.

4. Bed and Breakfast, not to exceed three bedrooms and/or six (5) overnight guests.

5. Group Community or Family Community Residence proposed to be located within 500 feet, as measured from lot line to lot line, of any existing Group Community or Family Community Residence or for which the state does not require a license.

6. A Rowhouse or Townhouse Building consisting of no more than 5 single-family attached dwelling units may be constructed on any Zoning Lot with at least 65 feet of width at the building line fronting a highway or street right-of-way and a lot area of not less than 8,500 square feet. Any single-story dwelling unit shall have at least 680 square feet of living space and any two or more story dwelling unit shall have at least 400 square feet of living space on the ground floor, exclusive of unenclosed porches, terraces and garages. Each dwelling unit shall be completely separated by a sound proof fire separation wall or walls having the fire restrictive rating specified by the BOCA Basic Building Code. Each dwelling unit shall also have an independent heating, electrical, water and wastewater system and separate meters for each. After construction is completed, the owner may subdivide any such Zoning Lot into smaller lots, creating separate ownership in each dwelling unit; provided that each such lot shall have at least 20 feet at the building line fronting a highway or street right-of-way and a lot area of not less than 2,000 square feet. All other regulations in the R-3 Residential District shall also apply to each of such subdivided lots, such as the front yard set back requirement, the rear yard

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1TITLE VIII - R-3 RESIDENTIAL DISTRICT - Supplemented and Amended in its entirety by Ordinance 1454, Dated December 13, 1994.
Village of Rantoul R-2 & R-3 Zoning Regulations

SECTION 3. HEIGHT REGULATIONS

The maximum height of buildings and other structures erected or enlarged in this district shall be:

A. For any dwelling 35 feet, not exceeding 2-1/2 stories;

B. For any building accessory to any dwelling use, 14 feet, not exceeding 1 story;

C. For any other nonresidential building or other structure, 35 feet, except that such height may be increased to a maximum of 65 feet provided that for every foot of height in excess of 35 feet there shall be added to each yard requirement one corresponding foot of width or depth.

SECTION 4. AREA, WIDTH AND YARD REGULATIONS

A. Minimum Lot Area and Width: A Zoning Lot area of not less than 6,000 square feet shall be provided for a single-family detached dwelling, of not less than 7,500 square feet for a Duplex Dwelling and of not less than 8,500 square feet for a Rowhouse or Townhouse Building, with a lot area per Dwelling Unit and a minimum lot width at the building line per Dwelling Unit in accordance with the following table.

<table>
<thead>
<tr>
<th>Type of Dwelling Unit</th>
<th>Minimum Lot Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Dwelling</td>
<td>6,000 sq. ft.</td>
</tr>
<tr>
<td>Duplex Dwelling</td>
<td>3,750 sq. ft.</td>
</tr>
<tr>
<td>Rowhouse or Townhouse</td>
<td>2,000 sq. ft.</td>
</tr>
</tbody>
</table>

B. Front Yard: There shall be a front yard between the building line and the highway or street right-of-way of 25 feet.

C. Side Yards:

1. On each interior Zoning Lot, there shall be two side yards having an aggregate width of not less than 10 feet, with neither side yard having a width of less than 5 feet, except in the case of a Duplex Dwelling or a Rowhouse or Townhouse Building where no such side yard requirement shall apply to any interior lot line subdividing any such Zoning Lot into smaller lots so as to create separate ownership in each dwelling unit within any such Duplex Dwelling or Rowhouse or Townhouse Building.

2. On each corner Zoning Lot, there shall be two side yards, the side yard abutting the street having a width of not less than 25 feet, and the side yard not abutting the street having a width of not less than 5 feet, except in the case of a Duplex Dwelling or a Rowhouse or Townhouse Building where no such side yard requirement shall apply to any interior lot line subdividing any such Zoning Lot into smaller lots so as to create separate ownership in each dwelling unit within any such Duplex Dwelling or Rowhouse or Townhouse Building.

3. On any lot, in any side yard not abutting a street, a detached private garage may be erected and maintained. The garage shall not be closer than ten (10) feet from the rear lot line nor closer than two (2) feet from such side lot line not abutting a street.

D. Rear Yard: There shall be a rear yard on each Zoning Lot, the depth of which shall be not less than 25 feet, except that a garage structure may be erected within the rear yard portion of such Zoning Lot not closer to the rear property line than ten (10) feet and all other types of accessory use structures may be erected within the rear yard portion of such Zoning Lot not closer to the rear property line than two (2) feet, except that on a corner Zoning Lot any such accessory use structure other than a garage within 25 feet of the street right-of-way line may be erected not closer to the rear property line than five (5) feet.

E. Building Coverage: Not more than 30 percent of the area of any Zoning Lot shall be occupied by buildings.

SECTION 5. BUILDING SIZE

No building shall be erected for residential purposes having a ground floor area of less than 680 square feet for any single-family dwelling unit, exclusive of unenclosed porches, terraces and garages, except as otherwise provided for in Section 2.5 of this Title VIII above in connection with a two or more story Rowhouse or Townhouse Building.

SECTION 6. DETACHED GARAGES

A private detached garage may not exceed 25 feet deep by 30 feet in width.

SECTION 7. OFF STREET PARKING

Off street parking requirements will be in accordance with the provisions set forth in Title XVIII of this Ordinance.

SECTION 8. SIGNS

Sign requirements will be in accordance with the provisions of Title XIX of this Ordinance.