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# Apprenticeship Learning in Interdisciplinary and Multi-cultural Environments: The Tejido Group from Panama to Palestine

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*Abstract: For the past twenty years, the Tejido Group has developed into an interdisciplinary and collaborative applied research program in which faculty, students, and professionals in architecture, landscape architecture, planning, and business management collaborate in apprenticeship-style learning environments. Tejido is also an international and multicultural experience focused on a wide range of project types including: sustainable community development, urban and small town revitalization, urban waterfront design, and sustainable tourism projects in the United States, Latin America, and the Middle-East. Given the complex nature of the global political, socio-economic, and environmental contexts within which we work, our research and resultant design strategies necessarily need to consider a range of ordering systems as potential sources of design and planning form, i.e. economic, environmental, cultural, functional, and aesthetic measures of sustainability. This in turn, suggests that our teams become interdisciplinary and international in composition. Although cultural and political schisms are at times all too apparent in these multinational collaborative environments, we often find that cultural and professional commonalities emerge and become increasingly apparent to all participants involved. We also find that these experiences begin to catalyze better understanding of the potential influences and confines inherent in our design and planning professions regarding their ability to effect meaningful change in urban and small town fabrics. We seek to develop learning environments where mutual interests become increasingly apparent; where participants begin to realize that they are in the process of acquiring an array of global professional skills capable of effecting consequential change; and if we are fortunate enough, an environment where a shared sentiment begins to emerge that we are a part of something significant and enduring. This paper will introduce the purpose, process and products of the Tejido Group through review of recent international projects, including discussion of the often innovative and at times unpredictable, educational, and professional outcomes.*

*Keywords: Apprenticeship Learning, Studio Education, Global Practice, Design Process*

## INTRODUCTION

**F**or the past twenty years the Tejido Group has developed into an interdisciplinary and collaborative applied research program in which faculty, students and professionals in Architecture, Landscape Architecture, Planning and Business Management collaborate in apprenticeship-style learning environments. Tejido is also an international and multicultural experience focused on a wide range of project types including: sustainable community development, urban and small town revitalization, urban waterfront design, coastal planning, campus master planning, and sustainable tourism development projects in the United States, Latin America and the Middle-East.



*Tree Festival in Birzeit*

Tejido has attempted to remain nimble in its ability to adjust and adapt to change within the profession, the projects and the student profile. This in turn, asks that we continually review our process, product, participant selection and training, and at times even suggests that we re-define our purpose. Our founding principles initially arose through affinity with the Bauhausian theory and the early writings of J. Dewey and later D. Schon, and have now migrated into study regarding design education and cognitive apprenticeship learning.<sup>1</sup>

The following introduces the purpose, process and products of the Tejido Group through review of recent projects in Panama and in Palestine, including discussion of the often innovative and at times unpredictable educational and professional outcomes.

### **Project Selection**

Tejido selects projects in which it wishes to participate based on several criteria: 1) project uniqueness and pedagogic value in developing our students into exceptional practicing professionals; 2) client need; 3) the project’s potential impact on society and the environment. Although Tejido has and continues to develop projects through the construction document phase, we primarily focus on the generation of conceptual alternatives for our clients. We concentrate our efforts on developing innovative concepts through the application of research initiative.



*Mixed Use in Birzeit*

<sup>1</sup> Dewey J., *Experience and Education*, (New York, Free Press, 1997); Walter Gropius, “Bauhaus Manifesto and Program” (Weimar, Germany, The administration of the Staatliche Bauhaus in Weimar, 1919); Schon, Donald, *The Design Studio*, (London, RIBA Publications for RIBA Building Industry Trust, 1985); and *Educating the Reflective Practitioner*, (San Francisco, Jossey-Bass, 1987); Brandt, B.L., Farmer Jr., J.A., & Buckmaster, A. “Cognitive apprenticeship approach to helping adults learn”, (*New Directions for Adult and Continuing Education*, 1993). 59, 69–78; McKeachie W.J., “Implications of Cognitive Psychology for College Teaching”, In: *New Directions for Teaching and Learning*, Ed: W.J. McKeachie, (London, Jossey-Bass Publishers, 1980).

Unlike associations with traditional design and planning offices, Tejido offers clients an opportunity to afford in-depth applied research, and the subsequent generation of alternative concepts prior to design development and construction documents. In “real-world” situations, the conceptual design process is often foreshortened when financial resources are strictly limited. As we are essentially a non-profit organization dedicated to the education of our students and the needs of our clients, we can afford to focus our efforts on pre-design research and schematic exploration with our clients in developing complex, yet tailored master planning solutions. We see our relationship with practicing professionals as one of project creation and not of direct competition.



*Colonial Fabric of Avenida Central*

We render conceptual design and planning services that otherwise could not be afforded. Tejido assists clients in developing their ideas to the point where they are ready to seek the services of professionals in the design development and construction document phases. The master planning documents we develop become excellent tools for our clients in the solicitation of international, federal, state and private funding. Many past clients have been awarded substantial development grants, and these funds were then used to hire professional firms to execute the design and planning concepts outlined in our conceptual master planning documents. We collaborate with host country counterparts in our international projects in both project selection and in the programmatic development process. We also work in interdisciplinary and international teams when abroad as a means of ensuring project relevance as well as guaranteeing that all participants, including government agencies and NGO’s, are committed collaborators. This of course, requires that all participants effectively communicate desired pedagogical and design outcomes for the studio. General sequencing and scheduling strategies are then discussed and developed, and alternative project programs and sites are examined. The host country participants most often take the lead in these tasks as they best understand what projects are most relevant to the needs of their communities. They are also better prepared to articulate central economic, environmental and social issues surrounding the projects.



*Design Team in Birzeit*

## **Participant Selection**

The globalization of our curriculum is a principal directive within Tejido and includes the development of our students into exceptional practitioners fully capable of working within a range of international fora.<sup>2</sup> As we often work in politically and economically complex multicultural scenarios, selection of potentially effective participants is essential. The call for student and faculty volunteers is in itself a useful pre-selection mechanism. When we ask for volunteers to work in the refugee camps of Palestine, only a select group of individuals usually steps forward. Our selection interviews reveal that most often these individuals are predisposed toward international work and that they are interested in developing a professional set of skills that enable them to function in distressed urban areas around the world. They are usually adventurous at heart, and want to develop a professional and personal relevancy in their ability to address global developmental issues. They usually understand that the globalization of the design and planning professions is requiring of them a new, flexible and comprehensive repertoire of design and planning responses to an array of complex urban development issues.

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<sup>2</sup> Friedman T., *The World Is Flat. A Brief History of the Twenty-first Century*, (Farrar, Straus & Giroux, 2005); Schumacher E.F., *Small Is Beautiful: Economics As If People Mattered*, (Hartley & Marks, 1973); Cuff Dana, "The Origins of Excellent Buildings"; Adelson Marvin, "Observations on the Star Firms Research Roundtable", In: *In Search of Design Excellence*, Ed: Shibley R., (Washington D.C., AIA Press, 1989).



Jerusalem

### Pre-immersion Process

We have employed cultural immersion strategies from a number of international organizations including Peace Corps, UNESCO and the U.S. Department of State/USAID.<sup>3</sup> Prior to travel we immerse potential candidates in a series of orientation seminars that introduce them to key economic, political, environmental and cultural issues of the host country. Language and cultural training along with guest speakers and the viewing of relevant documentaries are quite effective in introducing participants to the realities of the task set before them. We also develop in-country immersion experiences for student volunteers prior to engaging in design activities. For instance, the Palestine project allowed our students several days residence in old city Jerusalem prior to traveling on to our housing and project site near Ramallah. This visit assisted our students in familiarizing themselves with the diverse cultural, political, linguistic and historical aspects of the region, thereby reducing the inevitable “culture shock” felt by most individuals in similar situations. The first early morning call to prayer from the Al-Aqsa mosque adjacent to our hostel created quite a revelation in our students, and the realization that, “we’re not in Kansas anymore” became vividly apparent. The streets, the architecture, the food, the music, the languages, the odors, the behaviors slowly began to integrate our daily realities.

<sup>3</sup> Peace Corps Center for Field Assistance and Applied Research, “The NGO Training Guide for Peace Corps Volunteers-community-based training”, (Information Collection and Exchange, publication # M0070, 2011); Singh K., *Rural Development: Principles, Policies and Management*–3rd Ed., (Sage Publications, 2009).

Our design and planning processes have been hybridized and developed through study of ideation and concept generation and development strategies developed within a number of exceptional design firms.<sup>4</sup>



*On Site in Gamboa*



*On Site in Nablus*

## **Pre-design Process**

Although Tejido advance teams visit project sites prior to project initiation, effective liaison with host country faculty, students and professionals is also essential during the pre-design phases of any project. Months prior to our arrival, host collaborators assist in project selection as well as preparation of demographic, cultural, environmental, economic, and site-specific information for us to digest during pre-immersion activities at home. We review this data prior to travel and attempt to distill design and planning precepts/design implications, and sometimes even fledgling site development concepts that can be tested later on site and in early charrette sessions with host country participants. These exercises often help us better understand central issues, site potentials, and also help us identify what we don't know and what we need to further investigate. We believe that designers gain insight and inspiration from a variety of sources. An essential part of our design and planning process occurs during pre-design research. We involve our hosts during this phase, and information garnered from a variety of sources is reviewed

<sup>4</sup> Shibley Robert G., "Architectural Excellence: Framing the Debate", *In: In Search of Design Excellence*, Ed: Shibley R., (Washington D.C., AIA Press, 1989); Pena W. and Parshall S., *Problem Seeking: An Architectural Programming Primer*, (New York, John Wiley & Sons, 2001); White E.T., *Introduction to Architectural Programming*, (Tucson, Arizona, Architectural Media, Ltd., 1972); Prince G., *The Practice Of Creativity*, (New York, Collier Books, MacMillan Publishing, 1972); Lawson B., *How designers think: the design process demystified*, (Architectural Press, 1997).



and incorporated into the design intentions of our teams of landscape architects, MBA's, planners, and architects. Critical socio-cultural, socio-economic, environmental, functional, and identity-related issues are examined in depth through hybrid qualitative and quantitative methodologies.<sup>5</sup> Our designers then distill relevant design and planning implications from the analysis of the data collected. These bits and pieces of design ideas (precepts), are eventually incorporated into comprehensive design and planning concepts as a form of post-factum hypothesis generation. As part of our pre-design research, our teams and hosts collect information regarding clients and site through extensive case study analysis, video-tape protocol studies, and structured interviews and questionnaires. We also undertake exhaustive site inventories, as well as user-group analysis of the site and surrounding context. During contextual analysis we spend a great deal of time on and around the site as non-participant and participant observers. Some methods we employ approximate those of ethnographers and are qualitative in nature, while others are quite factual and employ low inference descriptor variables. We begin with a large scale contextual analysis—looking for key factors surrounding the site that may influence our design decisions within the site. This may involve detailed analysis of aerial photographs and G.I.S. data. We also photograph the entire site and surrounding urban and natural contexts—looking for existing positive design features unique to the site as well as problem areas in need of attention. These photographic inventories can become quite interesting in areas that rarely see Americans. In Birzeit, one of our students was photographing children playing in a vacant dirt lot and was instantly surrounded by a large group



*Children of Birzeit*

<sup>5</sup> Lofland John and Lofland Lyn, *Analyzing Social Settings*, (Belmont, California, Wadsworth Publishing , 1984); Goetz J. and LeCompte M., *Ethnography and Qualitative Design in Educational Research*, (San Diego, Academic Press Inc., 1984); Heath S., *Ways With Words*, (London, Cambridge University Press, 1986).

of very curious children. One bold child said something in Arabic to our student and then grabbed her camera and ran into an adjacent derelict structure. The student, being the intrepid traveler that she is, immediately followed the child right into a living room to find him busily taking photos of his entire family. She was eventually invited in and shared a very pleasant afternoon with the family. That afternoon, this student began to learn the language and diminish the boundaries. On another occasion during a site inventory visit outside of Ramallah, three of our students were walking past a fire station. One of the fireman polishing an ancient fire engine yelled something and then walked toward our group. Without a common language the first few minutes were quite awkward yet the encounter resulted in an afternoon well spent singing songs and sharing a meal in the station. In this instance, the common language was i-tune generated. We try and develop a very opportunistic environment regarding design and the generation of design “ideas”. Even during data collection and site analysis activities we encourage idea formation. We are continually looking for anything that will give us meaningful lines on paper or monitor. As a summary task of the “pre-design” phase, all participant data collection teams make detailed presentations of their findings to all other Tejido and host design team members. In this manner information is disseminated to all participants and collective design synthesis can begin. These presentations include extensive review of all design precepts generated during the collection and analysis phases. As mentioned, our process encourages design activity throughout data collection and analysis. One general guideline we use is that analysis of fact is incomplete without discussion of the design implications generated by the existence of said fact. These implications are discussed, developed, and faithfully recorded for future synthesis activities. Our international projects most often manifest themselves as intense three or four week charrettes. In this foreshortened scenario, we are most interested in formative not summative feedback. We understand the importance of host and client participation, and that formative feedback and thorough research designs are essential to distinctive design products.

### Concept Generation

This phase asks that each individual participant attempts to synthesize issues uncovered during inventory and analysis into cohesive planning and design concepts. The individual concepts are reviewed in exhaustive design synthesis sessions. Focus is maintained on idea-building activities where reviewers are charged with the task of making each concept “better”. Hosts and clients are fully involved during these “formation” sessions. The relative merits of various design ideas are then evaluated according to a variety of design and planning ordering systems that we have embraced over the years. We ask ourselves the following questions:

- Is the design economically viable? Does it create jobs and income sources for the community?
- Is the design environmentally sensitive? Does it connect or enhance existing ecosystems? Does it create new habitat? Does it reduce our carbon footprint?
- Does the design create opportunities for meaningful social exchange and learning? Does it embrace the heritage of a site?
- Does the design circulate effectively? Is it safe? Is it easily maintained?
- Has the design identified and created an aesthetic sensibility appropriate to the history and culture of the region and its vision of the future?

These ordering systems are a form of checklist embedded in our design process, and we believe that an idea’s relevance and usefulness increases according to the number of different ordering



*Design Sessions with TibeH*

systems that it engages.<sup>6</sup> For instance, an idea that concerns itself with only aesthetic issues is not as useful as an idea that fully engages not only spatial and image-related issues, but also explores economic, environmental and social issues as well. A park with flowers is fine, but a park with flowers that meanders its way through a community increasing adjacent land values, creating economic infill incentives within existing infrastructure, mitigating erosion, promoting urban water harvesting, and encouraging meaningful social interaction is a richer, more layered and therefore more relevant concept and eventual urban component. The “best” ideas are recorded, and in subsequent group and individual charrettes, they are synthesized into 2 or 3 optimum solutions. At this point, client review is once again paramount, and alternative concepts are presented in three dimensional detail, including story boarding and digital modeling. Once again, we are interested in formative not summative feedback, and we have found that client feedback is more lucid and fluent when presented with a series of easily understandable images and models rather than two dimensional plan and section drawings.



*Watching the World Cup in Ramallah*

<sup>6</sup> White E.T., *Ordering Systems: An Introduction to Architectural Design*, (Tucson, Arizona Architectural Media, Ltd., 1976); *Introduction to Architectural Programming*, (Tucson, Arizona, Architectural Media, Ltd., 1972); Koestler A, *The Act of Creation*, (London, Penguin, 1964); Dinham Sarah, “Teaching as Design: Theory, Research and Implications for Design Teaching”, *Design Studies*, Vol. 10 no. 2, (London, April, 1989); “Architectural Education: The Possibilities for Research on Architecture Teaching,” *Architectural Record*, (April, 1987); “Architectural Education: Is Jury Criticism a Valid Teaching Technique?” *Architectural Record*, (November, 1987).

## Concept Development

During this phase, team members are asked to divide themselves into concept development teams according to their personal philosophical alignments regarding the alternative concepts at hand. Each of the alternatives will then receive additional attention. Prototypical focus areas located within the planning concept are identified and developed in greater detail. Ideas from these focus areas may have application to other areas contained within the concept. Ideation has been known to stall at times, and as design inevitably demands recursion, we may jump back into individual or group charrette activities. At other times, we might revisit data collection and analysis phases to better inform our process through the collection of new information or the analysis of old data through new eyes. Internal/external reviews are exhaustive and involved during this period. It is critical that participants have mastered small group dynamics by this stage in the process. Respect and positive idea building are the tools of choice during exhaustive and potentially contentious design tasks.<sup>7</sup>

## Working Environment

We have been fortunate to have had the opportunity to explore and at times, develop new collaborative environments and methods of design. We have found that above all else, the process should remain fun; it seems that we often forget what initially drew us to the design professions. This usually means equitable opportunity to participate and share ideas in a respectful and energetic learning environment. Collaborative design can be a miserable experience,



*Site Team in Nablus*

or it can be delightful. We believe that enthusiasm for the material, the process, and the people involved in design enables us to effectively build learning environments where ideas flow freely, unimpeded by excessively harsh criticism, and where the advantages of collaboration are consistently apparent. In this context enthusiasm can become motivational, and could be described as an enabling process where participants listen, question, reflect, empathize, and advise in sincere, non-manipulative manners. The task is to look for strengths and possibilities rather than core-defects and inevitabilities. Given the complex nature of the global political, socio-economic and environmental contexts within which we often work, internal and external cultural and political schisms are at times all too apparent. Yet conversely, we often find that cultural and professional commonalities also emerge and become increasingly apparent to all

<sup>7</sup> Hirokawa R. and Johnston D., "Toward a General Theory of Group Decision Making", *Small Group Behavior*, Vol. 20: 4, (Sage Publications Inc., November, 1989), pp. 500–523; Smith H., "Group Versus Individual Problem Solving and Type of Problem Solved", *Small Group Behavior*, Vol. 20: 3, (Sage Publications Inc., August, 1989), pp. 357–366

participants involved. We also find that these experiences begin to catalyze better understanding of the potential influences and confines inherent in our design and planning professions regarding their ability to effect meaningful change in urban and small town fabrics. We seek to develop learning environments where mutual interests become increasingly apparent; where participants begin to realize that they are in the process of acquiring an array of global professional skills capable of effecting consequential change; and if we are fortunate enough, an environment where a shared sentiment begins to emerge that we are a part of something significant and enduring.<sup>8</sup>

## Product

The following is a brief discussion of products resulting from our processes. We will also attempt to point out and discuss defining moments in the development of our design ideas as well as in the maturation of our students into global practitioners and citizens of the world. In both Palestine and in Panama we were pleased with the relevance and usefulness of both our design and pedagogic products. Several of our students are now living and working in both locations following these projects. This spring semester, Panamanian faculty and students are visiting our University to participate with us on local projects in Arizona. This reciprocation is difficult for the Palestinian students as visa issues have prevented their travel to date, but we will certainly keep trying to make this work. In Panama our client was the Governor of Panama, Mayin Correa, and she received our revitalization master plan with enthusiasm. The design has gone through a preliminary cost estimating process and will be presented to the President of Panama-Ricardo Martinelli for approval this coming December. The Palestine project was very well received by the Mayor of Birzeit-Yusef Nasser, RIWAQ and UNRWA. As funding is a critical issue for the Palestinians, we created a “modules of development” phasing strategy for them that allows the project to be employed through a number of discrete developmental packages that can be initiated individually given the appropriate political and economic environment. We hope you enjoy this very brief introduction into project outcome.

<sup>8</sup> Culbert S. and McDonough J., *Radical Management*, (New York, The Free Press, 1985); Amos Rapoport, “There is an urgent need to reduce or eliminate the dominance of the studio,” *Architectural Record*, Vol. 172: 11 (October, 1984), pp. 100–103; Frederickson M.P., “Design Juries/A Study in Lines of Communication”, in: *Journal of Architectural Education*, Vol. 43:3, (Spring 1990); Frederickson M.P., “Gender & Racial Bias in Design Juries”, in: *Journal of Architectural Education* Vol. 47:1, (September, 1993); Bowser W., “Reforming Design Education,” *Journal of Architectural Education*, Vol. 37:2, (winter, 1983), pp. 12–14; Rogers Carl, “Personal Thoughts on Teaching and Learning,” In: *Freedom to Learn: A View of What Education Might Be*, (Columbus, Ohio, Merrill, 1969); “Communication: Its Blocking and Its Facilitation,” (*Etc: A Review of General Semantics*, Vol. 9, Winter, 1952) pp. 83–88.

## Panama/the Revitalization of Avenida Central



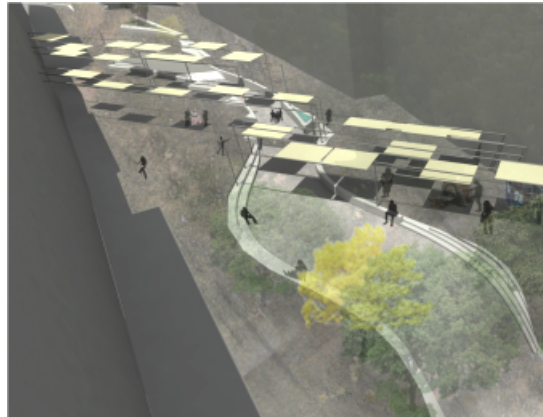
*Team Panama with Governor Mayin Correa*



*Avenida Central/Panama City*

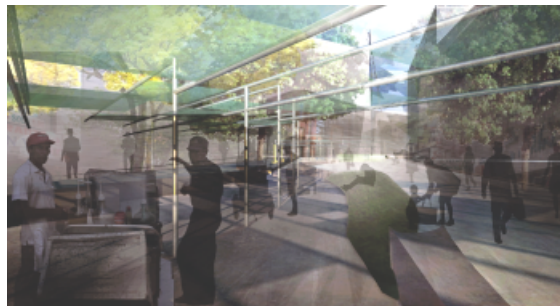
In the summer of 2011, the Tejido Group from the University of Arizona assembled a group of volunteer students from both the Schools of Architecture and Landscape Architecture & Planning to develop conceptual design solutions for a distressed urban corridor in Panama City, Panama. The project was a collaborative effort among students and faculty from both the University of Arizona and la Universidad de Panamá, and the offices of Governor Mayin Correa. The project was focused on the development of a revitalization master plan for Avenida Central, including urban connectivity strategies with the surrounding urban fabric of Panama City. With strong support from the governor's office, the students, faculty and professionals involved experienced a number of unique design challenges resulting in experiences which fostered both academic and personal growth. The Avenida Central revitalization project evolved into an attempt to develop a "sustainable urban living" prototype that may also have relevance to other distressed neighborhoods in this rapidly growing urban environment.<sup>9</sup> Avenida Central has the potential to become a main artery in the organizational body of Panama City. This pedestrian corridor acts as the transition point from the old to the new—Casco Viejo to contemporary Panama City. The design of this corridor is intended to embrace and integrate traditional and historic aspects of Panamanian culture, while at the same time, develop a new model for sustainable urban living; an urban environment that approaches sustainability across a number of dimensions—economic, cultural, functional, and environmental criterion.

<sup>9</sup> Beatley T., *Green Urbanism/ Learning from European Cities*, (Island Press, Washington D.C., 2000); Waldheim C., ed., *Landscape Urbanism Reader*, (New York, Princeton Architectural Press, 2006); Mougeot L., *Growing better cities: urban agriculture for sustainable development*, (Canada, International Development Research Centre, 2006); Doucet I. and Janssens N., ed.s, *Transdisciplinary Knowledge Production in Architecture and Urbanism: Towards Hybrid Modes of Inquiry* (London, Springer, 2011); Mostavi M., and Doherty G., *Ecological Urbanism*, (Harvard University, 2010); Mostafavi, Mohsen, Ciro Najle, and Architectural Association. *Landscape Urbanism: A Manual for the Machine Landscape*. (London: Architectural Association, 2003).



*Proposed Kiosks along Avenida Central*

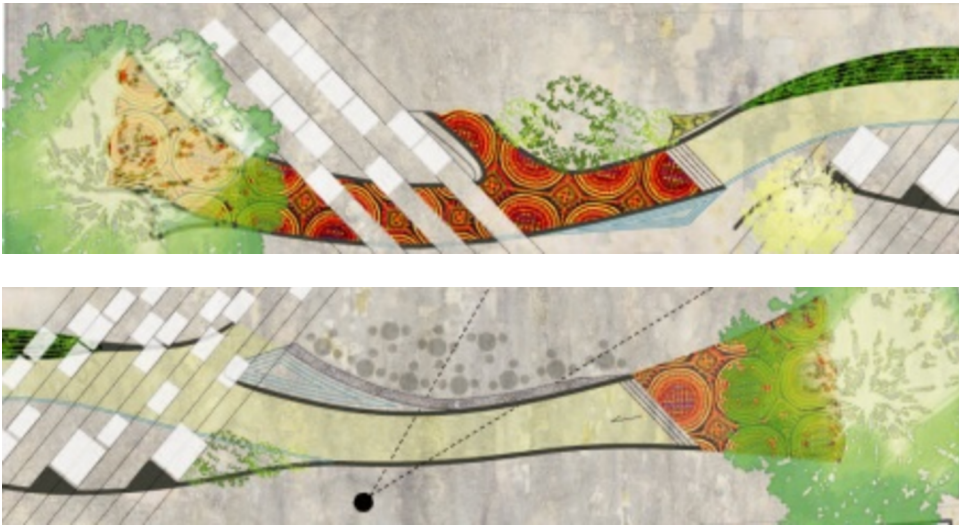
As it exists, Avenida Central is utilized for commerce and as a simple means of getting from one end of the street to the other. It is beset with many problems, and in order to activate/re-vitalize this corridor, many elements need to be taken into account. These include, existing site conditions, connections into the existing urban fabric, cultural integration, economic opportunity, pedestrian and vehicular circulatory as well as environmental degradation issues.



*Portable Kiosks*

The design is meant to offer potential solutions to these issues in order to add dimensions of sustainability to Avenida Central and create a focal point for the City. The main concept of this design is to create an efficient yet delightful street environment as well as offer flexibility; this is most evident in the division of the avenue. There are three lanes that are dedicated to various usages. The two outside lanes are meant for the expedient user, shopper or as a service lane, with the meandering center lane dedicated to relaxation and urban respite. The serpentine form that creates the three lanes responds to the urban context in very specific ways. For example, green pockets, water features or seating can be used to slow people down to showcase a piece of historic architecture or draw one's attention to certain programmatic functions. Another example is a lane opening into a series of stairs that can be used as a small amphitheater for a spontaneous performance. Elevation changes are also utilized to create different experiences and offer opportunities for different degrees of privacy and socialization throughout the streetscape. We are envisioning this street area as a form of urban green belt nimble and responsive to a myriad of municipal needs. Another important concept of Avenida Central is the "kioscos" and how they function. This is a major factor in assisting Avenida Central's economic sustain-

ability. They offer jobs and bring people into the site for produce and a number of different products. In order for the vendors to be successful, they must be mobile. The proposal is a semi-permanent structure that doubles as a shading device and specified modular kiosk space. The structure can be removed and stored in the hardscape to allow for a new programmed space to emerge in their place. When the structure is deployed, there can be more permanent kiosk space that the mobile kiosks can pull into, or restock at their main kiosk space. The corridor carries a strong concept of water throughout its entire length. It starts with one collection point at Plaza Santa Ana that begins to divide and pool at opportune moments. This brings an element of movement and tranquility to the site, and bio-swales strategically located throughout Ave. Central can double as water filtering systems that can then be used as participatory water feature for children’s play. In the larger areas of the avenue the water can begin to branch and move in and out of the hardscape.<sup>10</sup>



*Kiosks and Paving Patterns along Avenida Central*

<sup>10</sup> “The Tejido Group/Avenida Central”, last modified July, 2011, <http://www.tejidogroup.org/PANAMA%202011/Panama%20final%20small+coverX.pdf>

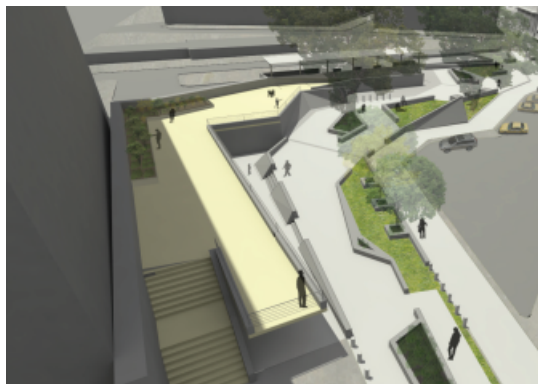


## Plaza de 5 de Mayo



*Monument at Plaza de 5 Mayo*

This plaza stands at the northern anchor to the pedestrian corridor along Avenida Central. Unfortunately, the commemorative monument honoring the tragedy of El Povorin is currently isolated, severed by rows of vehicles. This is why the design proposes a garden gathering point, rather than an island surrounded by automobiles and trucks. We also suggest that by relocating the monument thirty meters to the West, its presence can be celebrated in a park-like environment and that it can also signify the beginning of the pedestrian axis along Avenida Central. It will now stand as an iconic anchor located at the end of the pedestrian corridor. The axis continues, marked with thematic vegetation, marching across Calle B and terminating in front of the Anthropological Museum. The playful ambulation of mola (indigenous Kuna designs) paving patterns and planters help to draw people along the facades and to the threshold of our project area. The monument opens up to a reflecting pool set into a recessed stage, thereby allowing for its traditional use as a platform for congressional events. On a daily basis however, this space would create opportunities for strong social exchange given the variety of urban spaces and platforms integrated into the site. These ideas represent a design solution for the immediate future, a term we're referring to as a 'one-year plan'. More elaborate designs, one that may include a profound redirection of traffic, or transitional underpasses, are viewed as 'ten-year plans'. Given the complexity, the design would ideally grow toward these goals.



*Proposed Market at Calle J*

### ***Intersección de Avenida Central y Calle J***

This intersection presents an excellent connective opportunity between the pedestrian corridor and Cerro Ancon, including the Smithsonian institute. Through view sheds, vegetation and compatible architectural strategies, this connection can create a processional blending of the vibrant commercial street scene and a natural and education setting. The first design response would be to incorporate a vehicular turn-around, close off vehicles from the intersection and also allow pedestrians to move freely. The drop-off point would serve as an arrival and departure node while still maintaining adequate room for loading and service. Here, existing kiosks and parking structures are reorganized and incorporated into a new urban space. This design gesture serves a dual purpose. While it allows for traffic decompression, it also reactivates previously unavailable amenities, including athletic courts, a nursery, a recycling and compost center, public rest rooms and a small amphitheater. The park space is organized through a hierarchy of circulation patterns for different user groups. Each path will be supplemented with natural and interpretive educational elements, celebrating Cerro Ancon and metaphorically growing towards Avenida Central.

### ***Intersección de la Panamericana***



*Pedestrian underpass at the Pan American intersection*

Acknowledging both the growth of the city and of the population, the traffic of this intersection is likely to increase. In anticipation of this growth, the design illustrates an evolution from the previous, exemplifying what we're referring to as a 'ten year plan'. The implantation of an underpass would accommodate two circulation flows, offering a more casual pace for crossing pedestrians. The vehicles meanwhile, could maintain a moderate speed to keep traffic flowing. The underpass would mark the celebration of the ever present rainfall. The collection of rain water would start with a steady flow of descending water running through purification bioswales, until it culminates in a waterfall. The cascading water would be highlighted along the stairs, thus inviting pedestrian to enter the underpass. Once inside, pedestrians are given the opportunity to observe the movement of water, as it moves through the space with playful swirls, directly illuminated from above with natural lighting. A primary component to this design is the allotment for additional vendor space arranged along the underpass. These areas designated for the kiosks have an opportunity for permanence given the perimeter structure. Considering the potential flow of traffic, this would be an ideal economic situation. Given the amount of rainfall, this space would of course have to be engineered appropriately, acknowledging potential flooding.

***El Relleno Dos***



*Mixed use infill along Avenida Central*

In this area, there is a unique problem given the numerous amounts of mobile food vendors and the inadequate seating space associated with them. The concept of shade, blended with a

compelling atmosphere of gardens, art and a proximity to the pedestrian corridor, is the primary design response in this infill strategy. The adjacent slope of Avenida Central creates the perfect opportunity for orientation.

In response, elevation was used to place the pedestrian above the flow of traffic, allowing them to view the social dynamic from a unique perspective. The ground level plaza provides one the sole opportunity of relaxation off of the Avenida itself. This setting of relaxation is augmented with shaded multi-use tables, a sculpture garden, and a café. Urban agriculture is used as the economic driver in this location, supplementing an existing need with the potential for social exchange as well. The rooftop greenhouse creates the produce, the market sells the produce, the café prepares the food, and ultimately, the pedestrians purchase the food, enjoying the atmosphere as they are exposed to art and culture all the while.

This was a wonderful experience for all of us on many different levels. We have all grown a great deal, both personally and professionally. The Avenida Central project was a relevant and timely project in which we were both challenged and inspired to do our very best to offer our clients conceptual design alternatives that approach sustainability on many different levels. It has been our intention to generate solutions that are relevant to this urban culture and site context that will perhaps suggest prototypical strategies for sustainable urban living. Accordingly, our designs seek to develop revitalization strategies for Ave. Central along the following dimensions: Economically, by creating jobs and opportunities for locally owned businesses to prosper and compete effectively with corporate entities; Environmentally, by reducing the carbon footprint of its inhabitants in creating a place where one could work, live, and produce consumables all within walking distance; Socially, by creating a neighborhood where history and learning are celebrated on every corner; where youth can learn and interact in socially relevant ways with one another, and where opportunities to enjoy natural open space are ever present; Functionally, by creating design concepts that circulate efficiently and are pedestrian focused in nature; where our design solutions are durable, easily maintained as well as safe and secure.

***Palestine/Urban Connectivity in Birzeit***

During the summer of 2010 the Tejido Group from the University of Arizona assembled a group of volunteer students from the University’s College of Architecture and Landscape Architecture to collaborate on a series of projects in Palestine with RIWAQ / Centre for Architectural Conservation and Al-Najah University in Nablus. The groups focused on developing urban revitalization and connectivity strategies for historic Birzeit near Ramallah, Palestine. It was a wonderful experience for all involved.<sup>11</sup>



*Palestine Team in Ramallah*

The following is a brief summary of the design and planning outcome of the collaborative effort in Birzeit. As requested by RIWAQ, one primary goal for this project was to build off of previous RIWAQ research and generate community revitalization and development concepts that could be coalesced into relevant master planning and design options for Historic Birzeit. One of the missions of RIWAQ is for historic buildings and centers to be seen as an important tool for economic and social development, and to change the existing local belief that they are a liability to progress. In response to that mission, Tejido spent a week in orientation meetings with RIWAQ and as non-participant observers of the cultural, socioeconomic, functional and environmental interactions throughout the town of Birzeit. Then, within a three week time frame, Tejido and students from Al-Najah University developed a conceptual master planning framework for the integration of the new and historic town centers of Birzeit based on a variety of landscape urbanism urban agriculture and urban infill strategies.<sup>11</sup>



*Historic Birzeit*

The following summarizes select design and planning concepts offered to RIWAQ, and the Town of Birzeit for their review. These interrelated concepts range in scale from urban connectivity and economic revitalization strategies to specific designs for mixed-use infill and student housing. During analysis, activity nodes of significance that are both well-utilized and under-utilized were identified. As separate entities, these spaces are either non-functioning or could be enhanced by developing definitive relationships with adjacent nodes. The connections among these nodes represent the first dimension of the plan. The second is the connection, and therefore at times creation, of green zones and open spaces; a network of green was created to form the links among nodes, open spaces and existing dwelling and commercial activities within both new and historic Birzeit. The third dimension of the plan offers more specific architectural and landscape architectural solutions to an array of historic structures, infill opportunities and open spaces located throughout the Historic Center and the surrounding Birzeit urban fabric.

### **Existing Conditions**

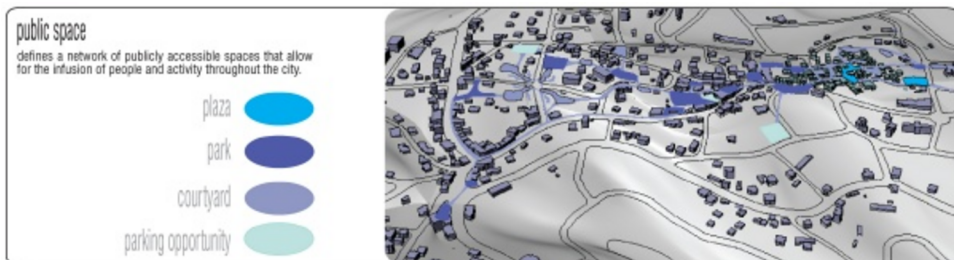
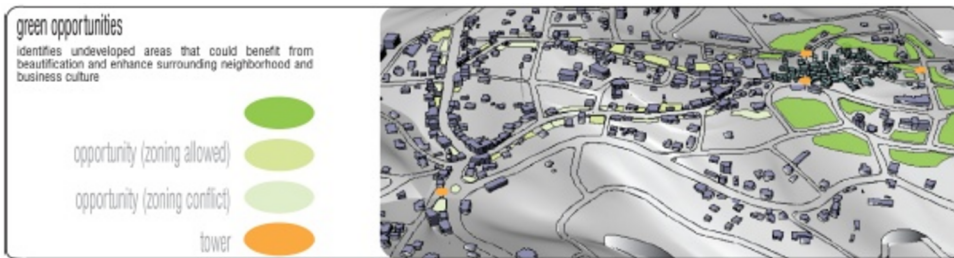
The site revealed that much of the social and economic vitality that once permeated Birzeit had quickly disappeared when Birzeit University relocated their campus nearer to Ramallah. Consequently one primary charge was to vision means of economically and socially revitalizing the town. Without the large student population present, both businesses and cultural life grew stagnant. Historic Birzeit was largely abandoned and remained disconnected from “New Birzeit”. The historic section was perceived by the majority of citizens as an inconvenient eyesore, and

<sup>11</sup> “The Tejido Group/Birzeit”, last modified July, 2011, <http://www.tejidogroup.org/BIRZEIT/BIRZEIT.htm>

as an area ripe for razing and subsequent development. New construction within Birzeit was relegated to linear strip development along the highway to Ramallah. As is often the case, street layout and design only reflected the growing increase in vehicular traffic and neglected pedestrian connectivity and open space potential that exists throughout the town. Many of the structures in historic Birzeit were not designed for modern living and were consequently abandoned, and the old stone structures throughout the campus of Birzeit University lay empty and decaying. Adaptive reuse strategies had not yet been explored. Another key issue for consideration was that the area surrounding Birzeit was once filled with agricultural activity where groves of olive and apricot flourished, but now developmental pressures from the surrounding context saw Birzeit as a potential bedroom community for rapidly urbanizing Ramallah.

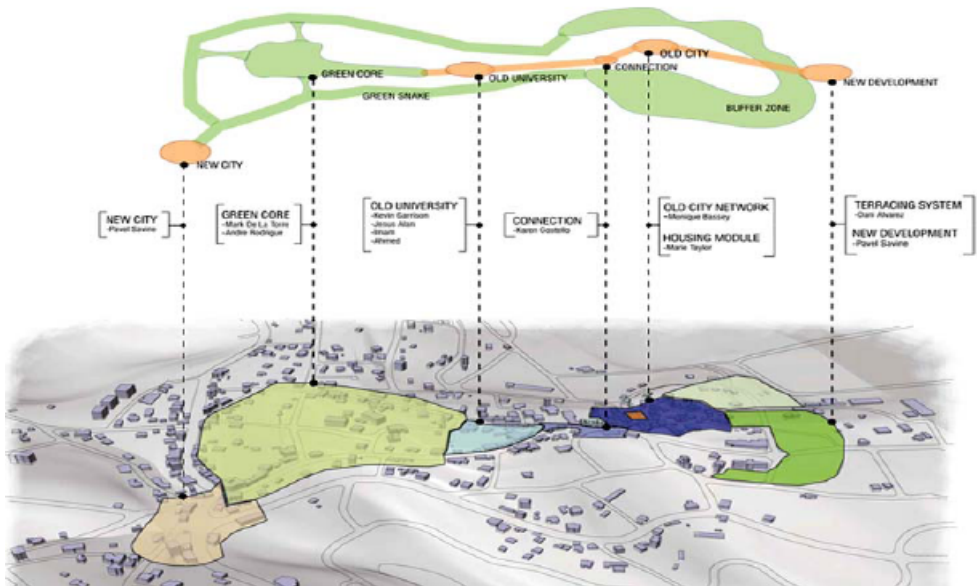
### Proposed Strategies

Due to the limited format here, the following is a very brief summary of select revitalization strategies contained in our final master planning document. In response to our analysis of existing conditions we sought to develop our design ideas in a layered and comprehensive manner. At an urban scale we revised existing land use surrounding and within Birzeit.





As a means of ensuring the historic identity of the village from encroaching urban development, we surrounded Birzeit with a green buffer zone derived from open space and publically owned land. This green zone contained recreation and open space opportunities as well as components of urban agriculture including restored orchards of olive and apricot arranged on stone terraces and integrated with water harvesting strategies. We developed block interior residual space into a pedestrian network of plazas and parks that responded to adjacent land uses i.e. residential, civic, commercial and educational. This network directly connected new Birzeit with historic Birzeit with a series of urban and historic trails that were in turn linked to public transit hubs. We developed many ideas for adaptive reuse including relocation of Birzeit University's existing architecture and theater arts programs back into the old campus and adjacent to historic Birzeit. Economic revitalization strategies included new infill student housing within and adjacent to historic Birzeit; farmers and artisans markets located near agricultural activity within the green belt surrounding Birzeit; sustainable tourism scenarios tied to the large numbers of tourists visiting nearby Jerusalem. Contemporary stone terracing is incorporated into the surrounding green belt. This concept not only provides a visual cohesion to the town but also contains orchards of economically viable produce adjacent to strategically located farmers and artisan markets. These terrace designs are also integrated with water harvesting and storage concepts.



## Focus Areas

During analysis, activity nodes of significance that are both well-utilized and under-utilized were identified. As separate entities, these spaces are either non-functioning or could be better enhanced by developing definitive relationships with adjacent nodes. The connections among these nodes represent the first dimension of the plan. The second is the connection, and therefore at times creation, of green zones and open spaces; a network of green was created to form the links among nodes, open spaces and existing dwelling and commercial activities within new Birzeit. The third dimension of the plan offers more specific architectural and landscape architectural solutions to an array of historic structures, infill opportunities and open spaces located throughout the Historic Center and the surrounding Birzeit urban fabric. As our time in Birzeit was limited to four weeks, our analysis helped us identify several key focus areas which merited more detailed design. The following is a discussion of select focus area design outcomes.



## New City Entry Area

As the ideal entry point into Birzeit (old and new), this was an opportunity for us to differentiate this area as a symbolic portal and introduction of an architectural language that continues throughout the town. We chose to work with historic precedents, i.e. ancient terracing and watch tower forms, and develop these into contemporary metaphors that act as entry elements—an announcement of the presence of historic Birzeit as a place and focal point within the community. This area was also developed into a multimodal bus and taxi hub to provide greater orientation and alleviate downtown disorder and congestion. The design incorporated and introduced a native plant palette along with a system of bio-swales and water harvesting concepts integrated into the terracing.





### Old University Campus Area

The proposed design for the Old Campus focuses on revitalizing the open spaces and in turn, the adaptive reuse of buildings adjacent to them. By maximizing the use of the spaces year round, the Old Campus can help define and revitalize Birzeit. A central concept of the design of this area suggests the return of the previously relocated schools of architecture and performing arts to a revitalized campus home. This would return both the economic and cultural vigor of student living to Birzeit. In keeping with our sustainable tourism development concepts for Birzeit we also suggested that a small hostel/hotel be developed here to serve the University as well as visitors to historic Birzeit. Day care, children's play areas, urban gardens, and a large events facility were also placed here to accommodate a range of programmed events such as the olive harvest, the annual Birzeit music festival, and other social gatherings. Pedestrian corridors accessible to the public connect a series of urban open spaces throughout the green core and the campus, thereby enticing villagers and visitors alike into the campus and adjacent historic center. A dynamic business market was also proposed to help create new jobs and pull income from external markets, at the same time serving to diversifying Birzeit's local economy. Environmentally it was important to reduce the heat island effect through a reduction of paved surfaces and large area shading strategies that were also coupled to integrated water harvesting concepts. Generally, we sought to develop the old campus into a series of open spaces and gardens surrounded by historic structures that house relevant contemporary functions. We saw the campus as a continuation of pedestrian links that run from new Birzeit on the west, through the green core area, the old campus and onto and through the historic district to the west. This area has the opportunity of becoming an urban respite as well as a cultural center that attracts visitors from adjacent urban areas, i.e. Ramallah and Al-Bireh.

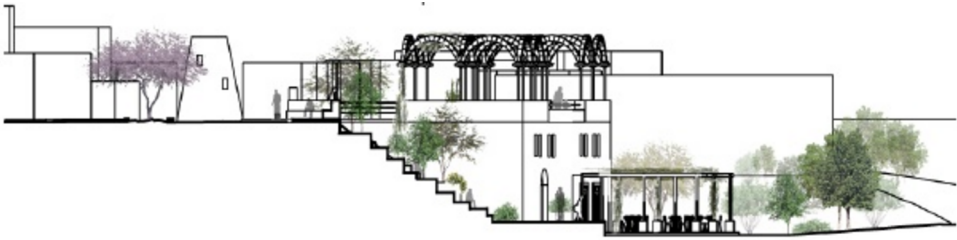


*Amphitheater at the Entry to Historic Birzeit*

### **Historic Birzeit**

The proposed design seeks to give the Historic Town Center a strong focal area and anchor all of the attractions into a central point. It proposes to widen the road, build a roundabout and drop off point. It also proposes to build a small plaza over a centrally placed vacant building and use the land for an open air theatre to be used by the town and the University's theater arts program for cultural, social, public and private gatherings. The drop off area next to the plaza makes it easier to reach the center of the Historic center. Taxis can drop off or pick up by the plaza and then return via the roundabout. This should lead to an increase in traffic, and business, to the area. The building below the plaza will be in a prime position for business. A business such as a restaurant that caters to weddings and other special events could become an important employer for the town. The plaza and terraces can accommodate all types of ceremonies. A successful caterer could buy locally produced agriculture, further strengthening Birzeit's economy. The greenhouse and land below could also support a plant nursery. The amount of building development within a 20 mile radius could support such an endeavor.





The plaza serves as an entry point to the town. The views from this vantage point are wonderful, and the area can be easily closed off to traffic for large functions. The roundabout and drop off area encourage people to use the multi-functional outdoor terraced theatre—a flexible space, suitable for all types of events. The proposed watchtower is a reminder of Palestine’s historic building types, and the arcaded seating areas are also an acknowledgement of Palestine’s architectural heritage. We believe this area is a critical introduction to historic Birzeit, and although the plaza and terraces are perfect places to sit and enjoy the views and nature, we have designed it to also deliver, gather and entertain large groups of citizens, students and tourists alike.



*Infill student housing in Birzeit*

## New Development and Urban Agriculture

In this west end area of the site, we have once again introduced terraced crescent forms that serve as circulation links among open green spaces. The shape, changing heights and placement of the forms reinforce the “green buffer” concept, simultaneously creating job opportunities for locals to participate in urban agriculture. The design for the northeast crescents draws from

the ancient use of agricultural land terracing surrounding the city of Birzeit. The forms are developed from attention to topography and land ownership. They create opportunities for urban agriculture thereby creating job opportunities for the community. In addition to urban agriculture, native Aleppo pines can be planted as a symbol of history and culture in Palestine. The placement of the housing units utilizes the existing stone walls of the terraces as a thermal massing strategy. Modernity is referenced through the use of steel structure and shades, providing a benefit to local metal workers. In addition to providing shade, steel louvers can also be used for growing produce. Operable windows and cross ventilation strategies are utilized to keep cool and eliminate the need for central air conditioning. Thermal comfort is also provided by proximity to trees that create a cooler micro-climate. Level changes and shared courtyards reference the ancient buildings in the area, and more spaces are created for spontaneous social interaction. The clustering concept of the proposed development continues the Old City ethic of high density development, and the construction is low-tech and could use the local labor force. The planting of a ‘green agrarian-based buffer’ surrounding this area creates incentive for the continuation of traditional agriculturally-based activity and new local jobs. The clusters contain structures that also house machinery and farming supplies that support the cultivation of the buffer. Two vocational/adult learning schools are also in this new development area as well as play spaces for children. Adults learn, while children are nearby and occupied. Pines and other produce bearing trees, in combination with stone-walled terraces, subtly announce the historic center of Birzeit. In addition to urban agriculture, landowners can generate income by building and renting small residences. Built form in this area should be controlled, and housing units should maintain specified building heights and areas in order to protect the agriculture and preserve the beauty of the city’s historic center.



*Mixed use infill along new terraces*

**In Conclusion**

We often work in complex and unfamiliar environments, yet our research and past experience in design education indicates that certain phenomena consistently appear to be productive ingredients in successful learning and teaching environments: trust, respect, enthusiasm, and ef-

fective leadership. We have also become dutiful to the notion/observation that appropriate and innovative design and planning solutions most often arise from rigorous research and collaboration. We try to make each *Tejido* undertaking an innovative research project, thereby bringing greater accountability and rigor to the process of conceiving and testing design ideas. Although we do not believe in “intuition” per se, we do understand that the more we prepare; the more we research; the more we examine alternatives; the more likely it is that we will experience that very special moment of “intuiting” myriads of variables into singularly appropriate solutions. We believe that these inclusive working environments and well-articulated processes have, in part, enabled our students to adjust and adapt to unique environmental and cultural contexts and to consistently produce innovative design and planning products.<sup>12</sup> We carefully follow the careers of past participants and strive to accurately assess post-*Tejido* growth and learning. Their insightful and consistently affirmative responses to our surveys are gratifying and also serve as an excellent means of monitoring and fine-tuning these complex learning experiences. We are currently developing a fifteen week College sponsored program in Oman for the fall semester of 2012, and a four week program in Hong Kong for the summer of 2013. Much of the itinerary, project selection and design methodologies for each of these projects have been influenced by our post-experience surveys. We will be posting more about these projects during fall semester, 2012 at: [tejidogroup.org](http://tejidogroup.org).

### ABOUT THE AUTHOR

*Dr. Mark Frederickson:* Dr. Mark Frederickson is an associate professor with the College of Architecture and Landscape Architecture at the University of Arizona. He received his Ph.D. from UCLA, and his B.ARCH. and M.ARCH. from the University of Arizona. He was a Peace Corps Volunteer, an ORS Scholar with Edinburgh University, and the recipient of three Senior Fulbright Scholar Awards. Dr. Frederickson has taught and practiced architecture, landscape architecture, and urban design in a range of cultural, environmental, and professional contexts in the United States, Europe, Latin America, and the Middle East. He is also the director of the *Tejido* Group, an international and interdisciplinary community outreach design and planning program at the University of Arizona.

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<sup>12</sup> “The *Tejido* Group,” last modified July, 2011, <http://www.tejidogroup.org/>

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