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Connecting commercial opportunities to community needs
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• MASTER PLAN OF CENTRO COMMERCIAL
• RECOMMENDATIONS FOR PARTICIPATORY DESIGN PROCESS

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PROJECT PURPOSE

The value and potential of the built assets currently situated at the Centro Comercial Monteverde (CCM) are substantial. With enough indoor space to house most of downtown Santa Elena and enough outdoor space to host a town fair, the site presents a unique opportunity for the surrounding community. As the project changes ownership, it stands at a critical juncture. Lack of patronage due to negative local sentiment has demonstrated that community support is a necessary element in the CCM’s future success. This report aims to address the economic benefits of incorporating strategies to meet the needs of the local community along with sustainable measures to enhance the local ecology. Neither CCM’s owners nor the Monteverde area residents of current and future generations can afford to let the materials, energy, capital, and space already invested in this project go to waste.

In a place like Monteverde where the natural environment is the crux of the ecotourism economy, every decision that affects the environment must be calculated carefully. Sustainability in respect to a built project, however, does not just entail the application of environmentally sensitive design. The CCM’s master plan must consider the project’s viability in terms of cultural and economic sustainability as well. Fortunately, these factors work hand in hand. By synthesizing ecologically sustainable practices with design for community needs, the master plan could greatly improve the economic vitality of the site. This report will demonstrate that cultural, economic, and environmental interests can be addressed with an integrated solution. The future success of the CCM requires careful planning for all three factors.

This plan proposes to transform the CCM into an asset that addresses community and ecological needs. By doing so, this project will draw the tenants and patrons needed to make it financially viable and by incorporating sustainable design strategies, will significantly reduce its long-term operating costs.
The site is located in Cerro Plano within the Rio Guacimal watershed. Its physical boundaries are determined by two bordering roads which connect the site to Santa Elena at the northwest intersection and the Monteverde Reserve at the northeast intersection. The current topography of the site is the result of previous development that manipulated the landform into a series of terraces that step down from Cerro Plano toward downtown Santa Elena. This alteration to the grade influences the hydrological movement on site, for all runoff flows to the western region, which is in close proximity to major waterways. The site covers a total area of thirty five thousand four hundred fifty seven meters squared (35,457 m²). Five thousand four hundred eleven meters squared (5,411 m²) encompasses the building and parking footprint, and the total floor space amounts to six thousand five hundred seventy four meters squared (6,574 m²).

The following diagram outlines the building’s spatial capacity and existing retail usage.

The built environment on site consists of a sloped parking lot and pedestrian walkways situated within an inward facing structure. From the interior space, the building maintains no strong visual connections to the street.

The undeveloped portion of the site is characterized by sparse vegetation due to improper stormwater runoff management, which results in erosion of top soil. This condition has prevented the site vegetation from returning to its original state.
parqueo = 64
total de espacios de negocios = 50
espacios de negocios ocupados = 5
caseta del guardia = 1

diagrama:

- espacios pequeños
- espacios medianos
- espacios grandes
- espacios de almacenamiento
- espacios de servicio

- abarrotes
- ropa
- mascotas
PART II: CONTEXT & SITE ANALYSIS
Costa Rica is located in Central America, bordering Panama to the north and Nicaragua to the south. The country is divided into seven provinces: San Jose, Alajuela, Heredia, Guanacaste, Puntarenas, Cartago, and Limon. These provinces are divided into counties and are further subdivided into districts. The country is also separated based on the Continental Divide where all places to the west are classified as being on the Pacific side and the areas to the east are labeled as being on the Atlantic side. Monteverde is located in District 9 of Puntarenas County which is part of the Province of Puntarenas, situated on the Pacific Coast near the Continental Divide in the Tilaran Cordillera. In addition, the Monteverde district is located in the Rio Guacimal Watershed. Most of Monteverde lies in the tropical montane cloud forest. Out of the twelve lifezones of Costa Rica, the Monteverde region contains seven. The area also has 2 seasons: wet (May - October) and dry (February - May) and an accompanying transitional period (November - January). Much of the region is divided between forested areas and agricultural land. (Nadkarni 2000, 15)

Regional Context

Land Cover

Disturbed Forest: Undisturbed forest land that has fallen as a result of deforestation due to urban development, agrarian uses, or natural disturbances such as forest fires.

Secondary Forest: An area that has been reforested after disturbance where the effects are no longer apparent. These are considered young forests that are not primeval or old-growth. (Source: wikipedia.org “Landcover/ Landuse”)

In the case of Monteverde, much of the reforested abandoned agricultural and pasture lands are considered secondary forest. At this point, many pasture lands are transitioning back into forest land due to a huge increase in deforestation for agricultural use.

Grasslands: Areas where grass (herbaceous cover) is the main vegetation. These areas are also known as agricultural lands and pastures.

Charral: An uncultivated area that has been dormant for less than three years. Vegetation found in these areas consists of thorny plants and shrubs with a small portion of woody plants.
Tacotal: An area of a property that remained uncultivated for more than four years where plants were planted and introduced, encompassing natives & non-natives.

**LIFE ZONES**

Lifezones are calculated based on mean annual temperatures and the amount of rainfall. These factors determine the type of vegetation that can grow in each lifezone and the wildlife that can be supported. The Pre-Montane wet forest spreads between eight hundred and one thousand five hundred meters along the Pacific slope. (Nadkarni,41)

**BIOCORRIDORS**

Biological corridors consist of protected land that works to preserve the connections between larger conservation areas, aiming to prevent the fragmentation of natural habitats. These areas of protection usually span along streams or rivers since they are major links in respect to wildlife migration patterns.

**ADDITIONAL INFORMATION**

Many of the biological corridors in Costa Rica exist to protect designated areas from certain types of development (e.g. urban conditions). Due to deforestation of highland forests in Costa Rica, the plant and wildlife diversity of Monteverde has been significantly impacted. Making matters worse, the large expanses of pastures, roads, and urban development found in the region further disconnect preservation areas, rendering them useless in some cases. Biological corridors already exist in the Monteverde area, but, with a lack of law and policy enforcement from the municipality, these sites are not protected by law. The corridors follow the building codes for river buffers, requiring that development not encroach within fifteen meters of the river.
or stream. An exception to the rule exists, however, in which the buffer zone area increases according to increasing elevation.

**BIRD MIGRATION**

Restoring biodiversity in an area is usually an initial step in preservation efforts, so, to work towards this goal, birds are introduced into an area by way of planting native trees to attract local bird populations, utilizing the various properties of the tree, including its fruit, insects inhabitants, or nesting potential. In this area, the premontane wet forest, a diverse mix of birds reside that would nest longer in the area if trees were planted and connections between the forested areas were made.

Many of the birds in Zone 2, the premontane wet forest lifezone, are elevational migrants, meaning that migration occurs at one elevation on the mountain slopes, and, during breeding/non-breeding times, the birds move up and down the mountain or to the coastal areas. (Nadkarni 2000, 183)

The Resplendent Quetzal has a four-stage migration process. During courtship and nesting, it starts in the cloud forest of Monteverde Pacific coast (January – May).

After nesting, the bird moves to lower elevations down the coast and then ventures back up to higher elevations, crossing the Continental Divide. Eventually, it makes its way to the Caribbean coast until nesting season begins again. (Nadkarni 2000, 183)

stopped in the lowland areas of Costa Rica; after substantial deforestation in the country, their migration pattern shifted due to loss of habitat. (Nadkarni 2000)

WATERSHED

The Monteverde region is located inside the Rio Guacimal watershed where many major streams and tributaries descend rapidly down the Continental Divide. Consequently, water and its use are major issues for this region because of both the dry and wet seasons. The infrastructure intended to handle water in the upper portion of the Rio Guacimal watershed is not centralized, ignoring the requirements of municipal governments. Therefore, a large amount of the wastewater, aqueducts, and surface water are not being supervised thereby causing problems such as the introduction of greywater in freshwater streams. In the region, a substantial portion of the groundwater is undocumented, and many of the uses of springs and freshwater remains unclassified.

VEHICULAR CIRCULATION

Considering downtown Santa Elena’s relationship to the broader region is critical in grasping the varying dynamics that have influenced its urban form. Within three hours, visitors can reach the Liberia International Airport, serving the province of Guanacaste, while the Juan Santamaria International Airport in San Jose that serves the central valley of Alajuela is only three and a half hours away. Even closer, the passenger ship terminal in Puntarenas is only two hours away. Though the influences of these international-reaching terminals do not immediately manifest as a particular urban form, the degree of accessibility to three major gateways has undoubtedly subjected the Monteverde apex with urbanizing pressures, influencing its development and design.

The most notable aspect of Santa Elena’s urban geometry is its figure, informed by the convergence of roads, the thoroughfares that draw the keen adventurists, inquisitive ecotourists, and residents alike. For these users, the opportunities for accessing Monteverde are possible through both public and private modes of vehicular transportation. Within the realm
of public services, buses are available to and from San Jose, the country’s seat of government and finance, Puntarenas, the provincial capital of Monteverde, and Tilaran, Monteverde’s neighboring town. Shuttles between frequented locations provide an alternative to the public bus, and, at the other end of the spectrum, car rentals allow for a private means of visiting the town, accessing the one thousand four hundred sixty meter peak of Monteverde.

Despite these particular users and their preference of transport, entrance into Monteverde occurs on the region’s primary network of roadways. The Pan-American Highway in particular is a major thoroughfare which journeys through the mainland countries of the Americas and, to Monteverde’s convenience, is only 35km away. These roads serve as Monteverde’s arteries to the regional transportation infrastructure and have been the sole means of accessing the cloud forest’s rich and world renowned biodiversity but not without consequence to the local ecosystem.
The region’s primary roads lead to a juncture of commercial, religious, political, and cultural institutions, Santa Elena’s constituent parts. Arguably the most profound aspect of Santa Elena’s existing urban form is the diversity of users it aims to accommodate, and, as the city saw an increasing presence of commercial establishments, a comparative rise in the users of Downtown Santa Elena followed suit. The roads of downtown Santa Elena arouse an array of visual, physical, and emotional receptions, all induced by its street life, a way of life increasingly marked by congestion. Here the air is undeniably saturated by an industry that constantly drives the evolution of the cultural and ecological landscapes of the cloud forest’s municipality. Santa Elena stands as the epicenter of the locality’s eco and adventure tourism industries. Gauging the vitality of Santa Elena’s tourist-commercialism is a process that requires no means of calculation. Through innate human senses, congestion in the heart of downtown can be read by seeing and hearing the volumes of vehicular traffic and breathing in their exhaust. These choking roads are by no means a consequence of an esoteric phenomenon; in fact, it is a red flag that reflects an area starved of economic diversity. Tourism has a profound presence in this speedily developing rural-commercial hub. As an industry committed to providing an array of services to the foreigner, tourism by now has inscribed its history since conception unto the region’s urban fabric. These influences interestingly, for the better or worse, crucial in understanding the region’s evolving built environment, have generated a typology that epitomizes the Monteverde district’s shifting interest and economic base.

Santa Elena particularly exemplifies these interests, overwhelmingly evident by the type of businesses located within the triform convergence. However, these implications are
far more reaching than the outspoken signs that resonate with hospitality. The extreme growth of the area’s tourism sector has taken on various manifestations; one in particular has taken to the streets. Here, tourism has materialized as a barrier between the area’s ecologies. The high presence of tourist-oriented businesses have subsequently focused Santa Elena’s taxi base in the heart of town. Along with all the businesses that depend on the delivery of goods, Santa Elena’s triform has become a shared crossing between pedestrians, trucks, and others, reflecting a growing industry that holds much uncertainty for the future of its congested streets.

CULTURE

Population v Tourism

Since the opening of the Monteverde Reserve in 1974, the population of the Monteverde area has grown at a relatively steady rate of two to four percent and has leveled off at around four thousand. The rate of growth, at this point, has not exceeded the capacity of the area, for there are still many sites suited for potential development; however, increased development should not be the focus of the town, for part of what defines the area of Monteverde is the high volume of undisturbed land. In stark contrast, the rate of growth of tourism in Monteverde was steady until around 1990, but, from then to the mid nineties, the area experienced exponential growth, for the amount of tourists increased from twenty-five thousand to sixty-fifty thousand in the span of five years based on the Monteverde and Santa Elena Reserve Data. Ecotourism became a well-established industry in the area as Monteverde’s popularity grew internationally. Capitalizing on this influx of people, travel companies and more businesses opened to provide services and activities to visitors.
It should be noted that the numbers from the two reserves, although generally considered the most accurate statistics in the area in terms of tourism data, do not reflect the actual number but rather the proportion of which tourism has grown. Most residents of the community and members of the Monteverde Institute staff place the volume of annual tourism at about two hundred fifty thousand. The amount of tourism occurring in the region, however, is reaching its limit in terms of what the town can provide. If it continues to grow, commercial development in the area will have to increase and expand to compensate, a prospect that most residents are opposed to. Furthermore, this disparity between population and tourism numbers underscores the difficulty the municipality faces today in building and maintaining infrastructure, such as water systems and roadways, for the combined populations since funding must be generated solely by the local population.

Tourism Timeline
The growth of tourism does not directly match the growth in the population of the region. However, the rise in tourism directly corresponds with certain events in Monteverde’s history. The opening of the Monteverde Reserve in 1974 unofficially made the area a tourist destination, triggering an incremental increase in the rate of tourism annually. In 1983, National Geographic published a feature article on the area, raving about the amazing sights and sounds the region had to offer, and, after that, the international spotlight focused on Monteverde, spurring the high rate increase of tourism in the area and the establishment of other major tourist attractions in the area for a fifteen year period. Between the Children’s Rainforest opening in 1983, the Butterfly...
Garden opening in 1990, the Santa Elena Reserve opening in 1992, the Skywalk company opening and the publication of the Birds of Costa Rica in 1995, and the Selvatura zip-lining company opening in 1996, the area grew in popularity as a tourist hot spot and therefore the amount of tourism rose exponentially, more than doubling between 1990 and 2000.

At present, tourism stands as the main source of revenue of the town; when the last global recession came, the amount of people visiting the region decreased and businesses were struggling to make ends meet, portraying the reliance and importance of foreign revenue. For example, Poco a Poco Hotel in Santa Elena experienced waves of reservation cancellations in the midst of a building renovation during the recession of the late 2000s; in that situation, they were forced to request loans from various banks. Therefore, tourism is vital for the region and any new development should work to foster and maintain a sustainable level of tourists in the area. It should be noted that many locals believe that the area is reaching its unofficial capacity. The Monteverde Reserve, in an effort to control the tourism numbers, imposed a daily cap in 2007 to limit the amount of people touring the forest at any given time. The reserve cap most likely stems from the belief that the town does not have enough infrastructure or resources to support a greater tourist population. However, this year the Juan Santamaria International Airport in San Jose increased its number of terminals, allowing for more planes and consequently even greater tourism in the country as a whole. Whether this development works for or against tourism in Monteverde remains to be seen.
City Land Use Development

Holistically, the region of Monteverde has grown both residually and commercially over the past thirty years. The bulk of the growth has occurred in Santa Elena and Cerro Plano while Monteverde, the village, has only slightly changed. Santa Elena has experienced the densification of both residential and commercial areas in the north and main downtown areas from the 1980s to the present. Interestingly, in the early nineties, the southwest side of Santa Elena was barely developed; however, from that point to the present, a major commercial and residential area has been established. This development corresponds with the exponential growth of tourism in the same time period; with that fact in consideration and the constant densification of residential and commercial areas in the city, the increase in tourism necessitated the need for more people working and living in the area due to the increase in commercial establishments. Consequently, development grew with the demand in tourism. The same type of growth occurred in neighboring Cerro Plano in which residential and commercial areas were established at a large rate during the 1990s. Since tourism has leveled off, however, the establishment of commercial areas has slowed, but the residential areas in town continue to expand.

As the amount of tourism in the area has reached a plateau, the development rate slowed dramatically. However, the rate of development correlates directly to the growth in tourism, so, as long as the amount of tourism remains constant, development rates will not be significant. Many members of the community do not want more annual tourism than what they have currently and are opposed to substantial commercial development.
development. The relationship between these two factors rationalizes their concern.

**Downtown Land Use Development**

In 1986, the area in the vicinity of the now-present Centro Comercial was primarily residential and pasture land, most of which was concentrated in downtown Santa Elena. By 1992, many of the residential areas were converted into commercial establishments and additional commercial areas were built. Over the next decade, more residential and commercial structures materialized, concentrating on downtown Santa Elena and radiating outward, a concept portrayed in multiple downtown areas throughout the world such as Downtown Silver Spring in Maryland (USA) or, on a larger scale, Washington DC (USA) in relation to the surrounding suburbs. The growth in tourism and population also necessitated the development of the southwest area of Santa Elena; between 2001 and 2009, the sector experienced rapid growth, spawning multiple residential and commercial clusters. In general, development occurs in the area based on need, whether for the locals or tourists.

**ECOLOGY**

The land occupying Centro Comercial was originally used as pasture land, and, because the land was dormant for a substantial period, natural vegetation and forest began to reestablish itself on-site. However, in the late 2000s, the site was purchased, and Centro Comercial finished construction in late 2009. This development reshaped the landform and altered the ecology of the site.

Centro Comercial is located in a classified disturbed forest area. This type of land cover means that is was once undisturbed...
forest area, but, due to development in the area, the vegetation has changed, and areas that were once forested are now bare ground. The site is in a developed area that has a patch of forest on opposite ends and bare ground from construction regrading.

Centro Comercial is located in the Pre-Montane Wet Forest zone that is fairly wet all year long. This lifezone has tree species compatible to the climate and the wildlife associated with vegetation in this lifezone. Most of the vegetation in this lifezone are evergreen forest with a few deciduous species. The soil is suitable for agricultural purposes. Epiphytes are also common in many forests. Centro Comercial is located in the Bell-Bird Biological Corridor. This corridor is in the process of becoming a law-protected wildlife corridor for those animals that follow the Rio Guacimal.

Wastewater (three types):

Greywater - water that has been sullied beyond the point of potability but has not come in contact with human or animal waste. The criteria includes wastewater from sinks, showers, bathtubs, and laundry machines. Greywater has the capacity to be reused for laundry, toilet-flushing, or irrigation after simple sanitary treatment.

Blackwater - also known as sewage, blackwater is water that has come in contact with human or animal waste. Blackwater. It is important to separate the two so that each can be appropriately treated. Blackwater is rich in nutrients that can be
reused as fertilizer, but it is also more difficult and time-consuming to treat than greywater.

Stormwater - or runoff, is any volume of water from rainfall that must be handled upon reaching impermeable surfaces. This water should not be allowed to flow directly back into the natural environment for several reasons. For instance, when water flows over rooftops, concrete, or pavement, it collects toxins, trash, and heat, all of which can be very harmful to any natural ecosystem. Furthermore, a concentration of water flowing into a piece of land or a river has the potential to increase erosion and river flow rates. These are two more examples of stormwater effects that negatively impact the environment.

In the greater Santa Elena area, blackwater is mainly treated through the use of septic systems. Much of the greywater that is produced, however, is not treated. Instead, it is redirected into the storm drains that line most of the paved roads in the area. The majority of the combined stormwater/greywater that flows into the drains ends up in the Quebrada Sucia tributaries that pass beneath the streets. This occurrence can have negative impacts on the environment such as increases in water temperature, pollution, sedimentation, and flow rates. Furthermore, the water travels down through the Guacimal watershed, inflicting distant and unknown effects. Taking into account the amount of rainfall that Monteverde receives during the rainy season, as well as the annual flux of waste-creating tourist populations, it is important for Santa Elena to strive for an overall wastewater management system that is as clean and sustainable as possible.
On the Centro Comercial site itself, there is a large amount of impermeable surface area. Stormwater runoff from the roof flows into seventy-two drainpipes, and sixty-two of those redirect the water into an underground drainage system while the other ten dump directly onto the ground. Water from the paved surfaces flows into the ditches on the side of the streets. Both the ditches and the underground drainage system direct all of their water into the nearby tributary at two points just beyond the borders of the site. The total untreated runoff from the site is approximately one million liters per year.

BUILT FORM

Materials and Texture

The aesthetics of downtown Santa Elena differ greatly from those found within Central Comercial. Santa Elena benefits from a vibrancy of materials and colors that enhance the visitor’s visual stimulation and brings the buildings to life. In contrast, Centro Comercial suffers from a bland, cold appearance, serving as a further reminder of its foreign nature and lack of integration within its surrounding context.

Santa Elena over time has become a melting pot of forms, colors, and materials. This disparity between the different elements creates another layer of texture onto the city, illustrating its uniqueness and engaging nature. In particular, the city lacks a common building typology which allows the visitor to always experience a new perspective or view of the town. Much like the topography found in the region, the streetscape itself varies in heights and degrees of accessibility, for the roads are constantly congested with pedestrian and vehicular traffic, forcing the pedestrian onto narrow sidewalks with little room for maneuvering. Entrances lack...
prominence relative to the overall facade of the buildings since they are often situated either stepped back or elevated off of street level.

The materials used within the downtown area are no different than those found in homes around the area and much of Costa Rica itself. Corrugated metal decking is one of the most common building materials used for roofs due to its ease of use, pleasing appearance, and low cost. Additionally, concrete, another regularly applied material, is utilized in order to take advantage of its structural capabilities and thermal properties which allows it to passively cool spaces during hot days; increasing the amount of cooling, perforations to the concrete façades enable air to enter the space. Large windows located along the store front permit a substantial amount of light to fall within the area, lowering electricity costs and also offering bystanders a view into the space.

The material makeup of Centro Comercial is composed of concrete, metal decking, large windows, and plastic awnings similar to downtown; however, they are used in an inefficient manner. The architect selected a bland pallet, making the complex appear as a giant, intimidating mass that fails to connect with the surrounding landscape. The large windows, all facing inward, neglect to garner the attention or interest of the site’s potential visitors, contrasting the welcoming storefronts downtown. Furthermore, the orientation of the windows also disregards the consideration of wind and sun conditions on-site, focusing solely on visual continuity as opposed to sustainable practicality. Only the concrete on the site offers sustainable benefits since it can cool the spaces by virtue of its thermal properties.
Visual Connection

Centro Comercial suffers from numerous problems that hinder the visual connections to and from the site. These restricting elements originate primarily from the buildings, topography and vegetation, and promote the disconnection of the complex to its surroundings on a variety of scales, adding to the growing stigma and distaste of the site.

Santa Elena sits lower than Centro Comercial, so, to see the site, people in Santa Elena are forced to look up. The angle of this viewpoint distorts the perception of actual conditions, for it makes the complex appear to be farther away than it actually is. Currently, the site is only visible from two of the three corners of the downtown triangle. The two viewing points depict the mall as a backdrop to other businesses, including an aesthetically-unpleasing junkyard, but, because of the building’s orientation, the movement and activity on site is imperceptible. The northeastern point, found near the Chamber of Tourism, offers no glimpse of the site due to a grouping of trees and Vitasi’s drugstore. Since most visitors focus their activities in this area, the site finds itself at a disadvantage since the lack of a visual link will essentially render people unaware of the site’s existence.

Walking the border of the site also provides minimal knowledge of what the space has to offer. As it stands, the site, because of its design, offer only a few instances of clear visual connection inward. These obstructions are the result of the steep topography found on-site along with vegetation lining the borders. Where the building is actually visible, the prominent element is the large white roof when looking from the eastern border or, from other locations, a series of bare white walls with a few plastic brick accents. Currently, there are no windows or doors on the exterior walls to permit streetside entry into the various establishments.

Stepping into the complex, the visitor essentially disconnects themselves from the culture found in downtown Santa Elena. With buildings covering three hundred sixty degrees of the interior spaces and, it is nearly impossible to look out. The repetition of building elements harks back to the monotony of many structures found in the United States rather than Costa Rica, making for a further visual and cultural conflict. Immediately outside of the site, the visitor is easily able to see a panorama of the landscape, ranging from Los Llanos to downtown Santa Elena. The beauty of these views provides an opportunity to link Centro Comercial with downtown, mimicking the triangular form of the downtown area and forming a larger triangular connection.
Opportunity to link Centro Comercial with downtown, mimicking the triangular form of the downtown area and forming a larger triangular connection.
PART III: CHALLENGES, GOALS & OBJECTIVES
OVERVIEW

Throughout the analysis phase of the project, many goals, challenges, and objectives were identified based on the established categories of mobility, culture, built form, and ecology. The goals of the project were first established, aiming to address the outstanding problems and issues found on-site. From that, the challenges and obstacles hindering the accomplishment of the aforementioned goals were then determined. The objectives then aimed to provide solutions to the challenges, allowing for the achievement of the originally outlined goals. This process required collaboration between the four initial categories of mobility, culture, built form, and ecology to create effective solutions for the site.

CHALLENGES

ECOLOGY

• Lack of vegetation decreases the diversity of habitats
• Excessive amount of stormwater runoff is due to impervious surfaces and a lack of native plant material
• Much loss of natural soils due to the cut & fill of topography which increases erosion and sedimentation
• Excessive lighting of the exterior spaces has created light pollution
• Existing development disconnects previously established biocorridors

MOBILITY

• Automobile-dependent site creates difficulty for alternative site access
• Steep slopes limit accessibility because they cause blind spots when entering the site
• Disregard for the principles of universal accessibility
• No designated public transportation access points on site
• Lack of existing designated taxi spaces on site

BUILT FORM

• Building structure is inflexible and permanent
• Lack of continual flow due to the step foundation in interior spaces
• Building style is unfamiliar and out of context
• Building and site is not proportionate to the scale of the town
• Site facade is disconnected with the streetscape due to lack of street-facing entrances or windows
• Unused building stock

CULTURE

• Negative community perception to Centro Comercial due to lack of community input and involvement in initial planning
• Building style and the site is unfamiliar and unwelcoming
• Few community-based needs are addressed
GOALS & OBJECTIVES

ECOLOGY
Goal: Improve environmental conditions
Objectives:
• Use native plantings in revegetating the site
• Increase the diversity of wildlife habitat on the site
• Improve surrounding water quality by treating wastewater and runoff
• Decrease amount of wastewater leaving the site

Goal: Promote Environmental Awareness
Objectives:
• Demonstrate stormwater management techniques
• Demonstrate ecological restoration techniques
• Demonstrate sustainable building design techniques
• Ensure involvement of youth and people of all ages in sustainable design implementation
• Create ecological partnerships with local educational and other community institutions

Built Form
Goal: Improve integration with existing community character and context
Objectives:
• Improve building aesthetics to establish appropriate identity
• Diversify existing design style to incorporate into local urban fabric

Goal: Promote sustainable design
Objectives:
• Reuse existing materials
• Minimize new construction
• Reduce energy use and waste
• Reduce water consumption and wastewater discharge
• Utilize passive lighting and ventilation techniques
• Promote healthy interior spaces

MOBILITY
Goal: Improve vehicular and pedestrian accessibility
Objectives:
• Increase access to alternatives modes of transportation
• Create additional access points to the site
• Utilize universal design strategies for ease of use for the elderly and disabled

CULTURE
Goal: Increase community stewardship
Objectives:
• Involve community members in planning and implementation process
• Provide space for local events and public gatherings
• Incorporate uses to provide for community needs
PART IV: PROPOSED PARTICIPATORY DESIGN PROCESS
REINVENTING THE SITE

The design process for the Centro Comercial project values the element of community involvement to help ensure its success. This participatory design process was based on enhancing the sustainability of the economy, ecology, and culture of the site. The main goal of the process, therefore, was to garner community input and gain support in order to develop a master plan that directly meets the needs of the community, thus creating a truly sustainable space.

Although this project presents a master plan for the site, it is meant to be a catalyst for continued planning to address community needs. The initial phase of the continuation of this process would entail bringing the project to the attention of the local community and gaining user interest through different community events. Simple and inexpensive design interventions would draw people to the site and develop interest in the project's future. Once initial community support is established, a phased final master plan could be developed and implemented based on a timeline that is both financially and environmentally feasible.

COMMUNITY NEEDS

Based on information collected from previous Sustainable Futures reports ranging from 1996 to 2007 and informal polling of people in the community, particularly homestay siblings and parents, the needs of the community have not changed over the last fourteen years; in particular, the significance of this fact rests in the idea that two generations of people, despite changes in cultural trends globally, still yearn for the same things. Therefore, these needs are unlikely to change in the future and consequently should be implemented in the community.

Specifically, the people of the town have consistently requested a gym, movie theater, public library, performing/fine arts center, and community park. The youth of the area have always desired, as it was coined in the “Youth in the Zone” Sustainable Futures 1996 report, “a place to be.”

The reasons for these programmatic requests bring up several cultural disparities. Despite the substantial amount of runners in Monteverde, a gym does not exist to further facilitate their needs. Furthermore, the community would benefit from a gym because it would promote healthy living. This would increase the overall well being of the community, reducing health and stress problems for people in area.

Because of the long-standing desire for a gym, it would not suffer from underuse.

Another long-running desire of the community is the establishment of a movie theater. At the moment, no formal movie theater exists in the Monteverde region. The Centro Comercial area therefore lends itself to having such an establishment because it is located close to the most developed area in Monteverde, downtown Santa Elena. Access to national and international films serve to entertain and inspire people, and this community would truly benefit from this amenity.

A public library in most American towns stands as an institutional structure, one existing solely for the benefit of the community. The resource of a library in any town promotes the spread of information and the education of present and future generations. One of the greatest features of any library is the ability to borrow books from a limitless amount of topics and genres, making it an almost infinite source of information, especially when connected to the Internet. Furthermore, people are drawn to the enforced silence of libraries, providing them with a safe place to do homework, read a book, or study. In many cases, the library also becomes the main tool in teaching children how to read.
FROM THE PAST TO THE PRESENT

EDUCATION

ENTERTAINMENT

PERFORMING/FINE ARTS

HEALTH

COMMUNITY INVOLVEMENT

RECREATION
Monteverde would be able to take advantage of this amenity, allowing them a quiet place to do work as well as increase their literacy rates.

Within the area, a substantial amount of people practice all forms of performing and fine arts ranging from dancing, singing, playing an instrument, photography, drawing, painting, and other various creative activities. Currently, no place is available to foster these talents within the community nor does a dedicated facility exist for performances of any kind. This problem hinders the potential growth of the budding artists and performers of Monteverde. Furthermore, performing and fine arts have always been a major source and illustration of the culture of a region; coupled with the strong sense of culture instilled into the residents of the community, a performing and fine arts center of some sort would work to foster and showcase the cultural facets of the region on a larger scale.

Finally, the community has been clamoring for a public park because of the lack of an open green space in the area. A dedicated park would provide a source of recreation and relaxation for the community. Furthermore, it would provide a safe place for people to gather, exercise, or to be by themselves. In addition, it could be used to hold public festivals and events; consequently, it could stand as the perfect multipurpose space depending on its design.

Each of the previously mentioned elements would work to bolster the cultural, social, and physical well being of the community, and can satisfy the need of youth for “a place to be”. Whether a teenager wants to hang out at the park, take dance lessons, work out, read, or relax, those options would all be open to them.

GATHERED FEEDBACK

In the initial presentation reviewing the overall analysis of the site, various members of the community took the opportunity to voice their opinions and worries regarding Centro Comercial. The feedback covered a variety of topics, including circulation, culture, and money to name a few. Because one of the primary focuses of the project was addressing community needs and concerns, the discussion with the people was invaluable in terms of guiding the next steps of the project. From that, various problems and points of interest were able to be addressed in the design process.

1. General positive feelings for the relocation of the bus terminal, but there is need for services and shops on site first
2. Sharp turn and a steep slope makes the main entrance dangerous
3. People need to be able to leave their mark on the site to make it their own
4. Desire for child care and a community center
5. New ideas demonstrate potential and raise expectations for the site
6. Need for cost versus benefit analysis
7. Small changes over time may be more beneficial
8. Positive reactions to opening up the built form
9. Art and culture are important
10. Entrances or windows to the street could be a solution to the disconnected form of the building, but it may encourage people to park on the street
11. Agreement that rain water is an important issue on the site
12. Community would like to see how steps could be phased
13. Public entities such as the public bus authority need to be consulted
14. Local artists appreciated addition of art center
15. Relocation of a bank branch to the site is a programming alternative
PART V: INITIAL DESIGN STRATEGIES
GETTING STARTED

By organizing community events such as tree-plantings, "clean-up days", public art projects, or social gatherings that are centered around a theme of "reclaiming" the site, the initial steps could be taken to improve Centro Comercial’s public image. These types of occasions would bring community members together to share ideas and sentiments and begin to foster a public interest in the future of the project. The current problems with the Centro Comercial will not fix themselves, and it is important that people are aware of the ways in which they can individually impact how the center develops into a part of the community.

By sponsoring these events, local businesses that are planning for future growth could invest in Centro Comercial as a venue for expanding commerce. Other organizations such as schools, artist groups, athletic clubs, and church groups could use these events as opportunities for community service, fundraising, or educational projects. The formation of a voluntary organizing committee for these events might be an early step in the effort to link the community with this project.

Another preliminary measure could be to change the name of Centro Comercial itself. The utterance of the current name to any member of the local population immediately spurs negative perceptions and thoughts. This stigma prevents many people from envisioning the possibility of Centro Comercial becoming a useful and integral part of the community. During informal interviews where residents were asked about what they thought would improve the site and make it a desirable destination, the overwhelming response was to tear it down. Since this course of action is not a viable or sustainable option due to the money and resources already invested into the project, the incorporation of a project name change would show residents that the area is heading in a new direction with a vision that incorporates their needs.

Work-based site improvement events have the potential to bring the community together, for the labor force could consist of a varying cross section of interested citizens, volunteer organizations, church groups, students, children, and other stakeholders in the community. These events could be educational in the sense that participants would be able to familiarize themselves with...
the ecological, programmatic, cultural, and economic opportunities that exist on the site.

SPECIFIC OPPORTUNITIES:

• A tree-planting/cleanup day would allow people in the community to get their hands dirty in an effort to improve the appearance of the site. In such an event, people are empowered because they are able to make individual, measurable differences that they can be proud of. This celebration of the space would also be a first step towards the final goal of successfully revegetating the site.

• Centro Comercial could be beautified by local artists and children, using the white walls on the buildings as blank canvases to create murals displaying not only their talents but aspects of the local culture of Monteverde. There is no shortage of local artistic talent, and incorporating their designs in a highly visible location such as the streetside outer walls would further build on the feeling of community ownership of the site.

• The MegaSuper, which currently suffers from underuse, could provide food for a social event/picnic/cookout that might take place in the site’s open space. By doing so, the store could prove its commitment to community interests and gain some business.
TEMPORARY PLAZA/PUBLIC SEATING

A temporary tent structure, benches, and other creative modes of weather protection and seating in front of the newly located Chamber of Tourism would provide an outdoor space that could facilitate medium to large scale public events. This large covered area could be used for art festivals, picnics, community meetings, a bus shelter, farmers’ markets, holiday celebrations, or a rest area for tourists who are just arriving to the site. The creation of this space, due to its flexibility of use, would be an important catalyst for bringing activity to the Centro Comercial site.

RELOCATION OF SERVICES

Downtown Santa Elena currently hosts the main but informal, bus stop for the Monteverde area at the northern point of the triangular loop, contributing to congestion problems on the loop’s limited one-way streets. Local, regional, and tourist buses block the narrow streets and hinder visibility for both vehicles and pedestrians. Riders exiting the buses are confronted with competing tour vendors, service representatives, and taxi drivers. This causes regular confusion and frustration for the potential patrons of the downtown establishments.

The proposed relocation of the main bus terminal to the Centro Comercial site would allow for an enlarged transit avenue that does not block any public streets. Departing passengers waiting for their bus to arrive would have access to amenities such as public restrooms and covered public seating, and arriving passengers would be introduced to the Monteverde area through the relocated Chamber of Tourism office. Official taxi parking on site would provide for convenient pick-up and drop-off.

This change, combined with new public policy to limit parking in the downtown loop, would work to calm traffic and open up streetscapes for pedestrians. A more pleasant pedestrian experience will encourage patrons to stay longer, increasing the amount of business for the restaurants, bars, markets and retail establishments of the area. Meanwhile, newly arriving tourists will be quickly oriented with what Monteverde has to offer at the newly relocated Chamber of Tourism. They would learn about ecotourism in Costa Rica and be educated about measures they can take to be a more sustainable tourist.
PART VI: MASTER PLAN STRATEGIES
MASTER PLAN OVERVIEW

Centro Comercial, in the proposal, has a direct link to the present and future conditions of the downtown center of Santa Elena. Based on this principle, the master planning phase proposes four distinct yet interrelated zones. The East Zone defines all of the proposed space above the existing commercial center which is situated in closest relation to the Monteverde Reserve. The Central Zone encompasses the alterations both within the parking courtyard and built structure. The West Zone consists of the remaining lower portion of the site, closest to the triangle of downtown. The fourth region is the Downtown Zone which provides a new vision of what Santa Elena could be as a result of the proposals to the Centro Comercial site.
Entrance: The entry points to the Garden of Eden aim to become recognizable, non-obstructive landmarks of the Centro Commercial site as well welcoming spots to locals and tourist alike. The Garden of Eden entrance works to transform the character of the Centro Commercial site, immersing any visitor with the nature and culture that defines the region of Monteverde.

EAST ZONE

The main goal of the eastern zone of Centro Comercial is to reinvigorate biodiversity on-site while allowing local residents to enjoy open green space. This part of the site is less engaging in terms of attracting tourists because it lacks set activities, offering a more tranquil and organic like area with pockets of open space and vegetation. The sections of this space would include a new garden space within the zone called the Garden of Eden, an interpretive and educational rain walk, and a culminating view platform. These features would form visual connections throughout site along with providing educational aspects and biodiversity.

In particular, the Garden of Eden would be a hidden space in the site that allows visitors to see color in the midst of green in the form of fruit trees and shrubs, affording the opportunity for people to see some of the fruits and vegetables native to Costa Rica.

The rain walk feature of the site would raise awareness about the practice of rainwater harvesting. Rainwater is captured from the roof of the building then shuttled down through rain sills and collected in rain barrels. Afterwards, it
wildlife and their surrounding environment. To supplement the learning experience, information signs indicating wildlife types and site connections would also be available.

The open green space on-site is designed informally, providing open lawn areas that could be used for either a community picnic or just to lay out in the sun. Essentially, the use of these areas would be left to the discretion of the occupants, allowing for a degree of freedom and flexibility. With respect to pedestrian circulation, walkability and feasibility presented themselves as the main issues. The paths needed to connect the local residents on one side of the road to the other, necessitating the need for a shortcut, instead of forcing people to walk on the section of the street lacking a sidewalk because of an unreasonable slope. From this path, visitors can either take the long or the short route to access the Garden of Eden, offering the opportunity to explore local specimen trees and wildlife.

The overall site design is a case study in terms of biodiversity and biocorridors. If this site could regenerate itself and restore diversity, the connections between the currently protected forest spaces and the reforested area of the site could be established. The connections, in turn, could help this portion of the site become protected by law.
Rainwater Harvesting Walk: This feature is a walk that permits visitors to see the process of rainwater harvesting. The rain flows from the roof of the building and moves into the rain sills which then lead into the rain barrels. The water, once it is collected, is then reused on-site through PVC pipes in non-potable water sources. The rainwater barrels are adorned with art from the local community, adding cultural significance.

The Garden: The overall design and plant selection within the Garden of Eden strives to educate the visitor about the flora and fauna of the site and the region as a whole. The different species of trees each have a sign indicating the fruit they produce and the wildlife they attract. The visitors are welcome to pick a fruit as they stroll along and are reminded to spread their knowledge to others. The Garden also serves as a bio-corridor or natural connection to the nearby forest. Through this newly reforested area, wildlife would once again be able to pass through with more ease. This link also provides an opportunity for visitors to become spectators in the midst of active wildlife and learn how a bio-corridor functions.
1  Erosion control / Greening

2  Rainwater harvesting
SUSTAINABLE ELEMENTS

1 Erosion Control/Greening

For the purposes of slope protection and erosion and sedimentation control, the vetiver grass system is applied to earthen slopes to reduce the potential for landslides and pollution of downstream water bodies. Vetiver grass is effective because of its high tensile strength and deep growing, fibrous roots. This system proves to be cost effective and requires little to no maintenance. In one year, vetiver grass roots, on average, can grow two to three meters.

2 Rainwater Harvesting

The large surface area of the mall provides the opportunity for a rainwater collection system. The slope to the rear of the building could be a location to place rain barrels which would serve to both collect stormwater runoff and stabilize an already eroding slope. Locating a path between the slope and the building would bring people under the catchment display as an opportunity for education. The existing gutter system could be modified to shuttle water from the roof into rain sills which would direct water flow across the path into the barrels. From the barrel collection system, the water would cross back over to the building to be channeled into pipes for non-potable use in toilets, laundry systems, and other amenities. Not only would the catchment system inject free water into the building for the inhabitants, it could also be released slowly to irrigate plantings within the site and to recharge groundwater levels. The rain sill configuration would be designed artfully, creating a focal point during a rainstorm and dry periods when water travels out of the barrels. Implementing a cultural element, the rain barrels would encourage community involvement through barrel painting projects.
In considering how to provide a space that will allow the community to take back what was originally designated for the motor vehicle, an opportunity emerged to address the community’s general wellbeing. Through reclaiming parking spaces and establishing a culture that embraces foot traffic, the objectives of the site’s plaza require simple design solutions, leaving lasting effects on the environment and community.

Beginning with the established parking spaces ahead of the proposed structure housing the Chamber of Tourism and museum, a multiplicity of functions can be adopted in place of the narrowed parking area. In its place would stand a canopy whose assembly would keep to the tradition of simple construction and reuse the awnings which dress the under lip of the buildings which face the central zone. The canopy would function as more than a cover from the elements but would afford a place for the public to take part in leisurely activities. As the plaza contains the bus terminus for the Puntarenas, Tilaran, and San Jose buses, it makes for an exceptionally ideal waiting area for the passenger amidst his or her travels.

Beyond addressing the opportunities for physical wellness, the psychological state of the plaza’s users is also considered by integrating the presence of
water. With drainage swales in the form of riverbeds, this presence can be established, functioning with the two polar seasons of the Monteverde region. During the six months of rain, stormwater runoff from the ascending pavement would be filtered before it is released into area’s network of drains. Through the region’s arid season, the absence of water from the swale would symbolize a period of reverence for the element whose blessings have brought the richness of the flora of the area.

With planters and moveable tables and chairs, the plaza would be a true treasure for the public realm. The eastern most area of the plaza, in front of the site’s largest building which houses the proposed fitness center, library, and theater, allows for parking space on the flanking ends of this square yet challenges the manner parking is demarcated. Rather than allowing for bands of white markings on the asphalt surface, concrete blocks would be used to divide one parking space from another, which could possibly serve the base for simple plantings. As part of challenging the culture of driving within the site, speed tables and distinguished pavers would mark zones for crossing within the shared plaza, designing a procession that promotes the safety of the pedestrian. Bollards would also be used as a flamboyant strategy to indicate zones where motor vehicles are prohibited, solidifying the notion of a pedestrian culture the redesign of the site aims to achieve. Moreover, the determination of these strategies will set a model for greater Monteverde, and possibly the nation, setting a precedent for a pedestrian-oriented ethos.

PROPOSED PROGRAMMING

The integration of fundamental needs as expressed by the community of Monteverde is the ultimate objective projected by Centro Comercial’s reclamation, an ambition to impart new life to the site and region. By incorporating key services within the schematic design, architectural conditions can be given an opportunity to engage its users for the betterment of their wellbeing. An unprecedented opportunity exists for Monteverde to transform its still unfamiliar mall typology into a corridor that actively engages its periphery by rooting itself in the wide-ranging needs of the region. Beyond the recommended strategies that promote the health, safety, and accessibility of the site and its immediate environs, the programs seek to address Monteverde’s social and economic ecologies. Through dedicating services which aim to invest and develop the region’s social infrastructure, the community is ensured to yield gains from a site that formerly lacked any vision for the prosperity of future generations.

The injection of programs never originally meant to exist within Centro Comercial provides unique challenges whose solutions are capable of being delivered through design, an opportunity to critique the tunnel vision conception that currently occupies the six thousand five hundred
seventy four meters squared (6,574m²) of floor space. Among the services proposed in the programmatic scheme, the site’s security guard station, grocery, and three existing retail spaces will remain, leaving a considerable amount of space to reclaim. In view of the site’s future potential, there is an opportunity to recharge the site with usage for users who can significantly benefit from the services provided by such a grand scheme. Accommodating the needs of the greater community, visitors, merchants, and artisans, establishes an opportunity that must appropriately address a variety of scales. The designation of program must be considered without nearsighted tunnel vision and must resonate with purpose beyond a single class of user.

One service must compliment another, reinforcing the worth of economic diversity and creativity. By delineating space dedicated to civic, financial, medical, and institutional services, the foundations that uphold the community of Monteverde may be reinforced. It is critical to provide such services to a growing community, moreover, by housing these services within proximity to one another, and Downtown Santa Elena especially, a degree of transparency can be achieved where all members of the community have equal access to financial counseling, knowledge, specialized health services, and municipal support. In establishing the Monteverde Fine Arts Alliance, an organization dedicated to the advancement of the painting, sculpting, and illustrative arts, the community’s artists will be given a place to call their second home. Through the Alliance, the public will have the ability to informally engage the exhibition art and view artists’ work on pieces in progress. Through workshops which provide artistic and inventive services, the Alliance will help channel the artists’ creative energy into building strong business infrastructures that will support their work over the long term, seeding opportunities for the prospect of creative wealth and capital. As for on-site retailers, a similar concept holds true. By soliciting business owners who think creatively about their practices, in particular those with deep-seated interests in seeing their local economy benefit from their daily commerce, it is possible to achieve a model for best sustainable business practices for the Monteverde region and beyond.
The trapezoidal section of the building near the proposed bus stop presents itself as the ideal spot for the relocation of the Chamber of Tourism office. The location allows for building alterations to create a visual draw, attracting tourists into the site. The outer façade of the building, however, would remain untouched to facilitate transition and encourage movement into the mall interior. The center would house the welcome center desk, providing pamphlets and local area information. Furthermore, the ticketing counter for the bus system would also be located in the center with an auxiliary, canopy-covered waiting space. The creation of the tourism center is the first step in the process of the building's transformation and is necessary in creating visitor attractions to the site. In line with the project's adaptive reuse agenda, the alteration of the building does not entail the removal of old or the addition of new materials.

In particular, the ticketing counter would take advantage of the existing building composition, for it would be placed in two existing closets in which the dividing wall would be removed to create one space with access to the visitors center floor. This alternation would create a focal point within the tourism center and would work to increase foot traffic on site.

Outside of the building, the canopy ties into the roof of the tourism center to create the waiting area for those waiting for the bus. Its construction consists of the reuse of site materials of various sizes and texture removed from other sections of the site. The multitude and variety of materials would interact with the sun and affect the ground plane, crafting a unique visual experience.

The museum would be situated between the tourism center and the public bathroom, creating a cultural focal point within the site. Connections would easily be established between the restrooms, museum, and tourism center by removing various walls. The museum would allow for artistic and architectural insight into the Monteverde region and its rich cultural history. It would also feature information on sustainable practices implemented throughout the site.
By removing the interior walls of the museum, an open space would be formed, sculpting a coherent visual and circulatory flow between the tourism office and the museum. Through two ramp systems, universal accessibility would be achieved for those with mobility based disabilities, allowing for multiple paths that would act as the base for an educational and exploratory interaction within the space. Two of the existing tiered floor levels are delegated to an exhibition of Monteverde’s history while the next level is for sustainable practices. The last level is open to new exhibitions. Acting within the premise of adaptive reuse, many of the walls from the existing bathrooms and offices would be reutilized to create display areas.

ARCHITECTURAL INTERVENTIONS

The deconstruction of the building would see the removal of interior wall framing and gypsum board. Within the museum space, many of the large windows must be removed in order to eliminate direct lighting on historical artifacts. The glass would then be reused for informational walls to segment the spaces or within other areas that require more lighting such as the gym or retail spaces. Replacing the windows with removable display boxes that fit the dimensions of the window frame allows for further customization of the display space.

Open, glass-covered sections in the roof, situated above the displays, would allow for passive lighting into the museum space. Also, high ceilings and window openings would act as passive cooling in the redesign of the building showcase the value of sustainable design and would therefore influence future building practices.

MAIN BLOCK

The east building of Central Comercial occupies a total floor space of three thousand three hundred seventy eight meters squared, two thousand three hundred fourteen meters squared on the ground floor, and one thousand sixty four meters squared on the second level. It is the only commercial space currently operational within the whole complex, accommodating a large super market, three small clothing stores and a pet store on the ground floor. The remainder of the space, one thousand three hundred nineteen meters squared, remains unfinished and unoccupied. There are many challenges to programming these spaces due to the large
Proposed Athletics Gym
size and layout of these buildings. Original plans for the building included a bodega, large supermarket, gym and ten small retail stores.

The second level of the east building is solely accessible via a staircase found at the sidewalk level. Although accessible bathrooms are provided for, there is currently no access to them besides the stairs. The second level is currently divided into four large rooms, three of them averaging over two hundred meters squared and the fourth approximately four hundred meters squared. Original plans designated this area as office space.

CURRENT OCCUPANCY

At the southern corner of the complex, MegaSuper rents a single story, nine hundred fifty meters squared (950mt²) space. It is fully serviced by public utilities and maintains an office space, restrooms and direct access to a two bay loading dock. Adjacent the MegaSuper are five single story retail spaces, approximately fifteen meters squared in size. Three of those units are occupied by clothing stores and one by a pet store. Due to the size limitations of these retail stores, there is no provision for office space or restrooms. Based on current occupancy trends and negative public sentiment that prevents local patronage, the Centro Comercial is economically unsustainable and faces a difficult future.

MAIN BLOCK MASTER PLAN

The proposed master plan for the east building provides the Monteverde region with a comprehensive vision that takes an unused commercial area and transforms it into a vibrant public space that meets the health, educational and entertainment needs of the community. These public facilities establish a framework that has the potential to engage the community and connect them to the site, attracting investment and commerce.

MONTEVERDE SPORTS CLUB

The proposed Monteverde Sports Club, located in the northeastern corner of the east building,
Stage
Restrooms
Multiuse Theater
Snack Bar
Ticketing
Balcony
Stadium Seating
Stage
Multiuse Theater
Proposed Multiuse Theater
plays a valuable role in the community, offering unique fitness programs, experienced trainers and top of the line equipment. The sports club would aim to improve the health and well-being of the local population by providing access to low cost activities and courses. These courses would be designed to improve physical fitness and provide recommendations on nutrition and healthy living. Studies show that regular aerobic physical activity increases fitness levels and mental well being. It also plays a role in the prevention of both primary and secondary cardiovascular disease.

The Sports Club would occupy two levels within the east building, maintaining a total floor space of six hundred seventy five meters squared. Upon entering the club, a large living green wall would frame a modern-style reception area. To the right, a wooden staircase would allow access to a second floor unstructured classroom space. The ground floor of the gym would be divided into a space for cardio and weights. The remainder of the space would be allocated as changing rooms. Keeping universal access in mind, the ground floor of the gym would incorporate wider doorways and handicap accessible bathrooms.

The Monteverde Sports Club would be dedicated to supporting sustainable design by including many green features in its facilities. This purpose built gymnasium would utilize the collection of rainwater to irrigate a unique green wall that brings nature into the building. The green wall would help to refresh stale air within the facilities and also serve as a visual statement, marketing the club’s commitment to sustainability. In addition to irrigating the green wall, recycled greywater would also be used to flush toilets. This supplement to the existing water system would cut down on wasteful water consumption and reduce annual water costs.

Other sustainable measures that would be practiced by the gym include recycled rubber mats from the tire production industry, providing a durable slip resistant surface on the gym floor. This application decreases joint stress during physical activity. Along the northern wall, large windows allow indirect sunlight to enter the building, decreasing electrical consumption and creating a connection with the street level. A large extractor fan in the gym’s roof pulls cool air from the rear of the facilities throughout the building, offsetting the need for costly air conditioning.

COLIBRÍ THEATRE

The one hundred fifty seat Colibrí Theatre, located in the heart of Centro Comercial, would provide the community with access to live performances and cinematic productions. Local and international movies would play on a large screen throughout the week,
attracting locals and visitors alike. A large stage with spacious backstage facilities would work to accommodate both local and regional performance groups. Access to a performance space would provide an opportunity to showcase local talents and may encourage the establishment of a theatre group. The goal of the theatre would be to provide educational programs that engage community members of all ages.

The proposed Colibrí theatre would take advantage of the existing building composition. The thirty foot ceiling in the rear of the space is ideal to accommodate a large multi-use stage, stadium seating, and viewing balcony. The stage would be constructed to accommodate both large and small groups with changing rooms located on either side. The front of the building would house a ticketing office, concession stand, and accessible bathrooms. Outside of scheduled live events, the theatre would remain operational, showing domestic and international movies on a retractable screen. Nightly events at the Colibrí theatre would bring vibrancy and life to the Centro Comercial following the closure of the other stores. Multi hour programming increases commerce and reduces the need for additional nighttime security by keeping people on-site.

Sustainable features of the Colibrí Theatre would include bamboo flooring, rainwater harvesting that supplies water to the toilets, and palm fiber acoustic boards, a recycled waste product of the palm oil industry. Other sustainable features would consist of low cost, upholstered bench seating and a passive ventilation system that pulls air through the space, maintaining a comfortable environment. The decor of the theatre promotes local art and incorporates the color and texture of the area into its design features.

**MONTEVERDE PUBLIC LIBRARY**

There are three public libraries located within the Monteverde region, each associated with a particular school, including the Monteverde Friends School, Monteverde Institute, and the local High School. Each library is subject
specific or maintains a limited selection of literature that does not meet the overall needs of the Monteverde population.

The proposed Monteverde Public Library, situated within Centro Comercial, would offer universal, public access to information and literature. The library would provide a diverse range of multimedia outlets, consisting of a computer station and a library of books that service the public’s informational and entertainment needs. Free wireless internet access would allow users unlimited access to the Internet, attracting both locals and visitors into the site. It is often noted that a community with access to a public library maintains an educated and literate population.

Sustainable features of the Monteverde Library would include plantation wood shelving, bamboo flooring, greywater recycling, and compact fluorescent lighting. The library would also provide access to a digital library which reduces the need for print material.
1. Reuse of Material
2. Stormwater Filtration
3. Interior Green Wall
4. Passive Ventilation
5. Natural Daylighting
6. Eco-Friendly Bamboo Flooring
7. Recycled Rubber Gym Mats
8. Palm Fiber Acoustic Boards
1 Reuse of Material

With the proposed programming for interior space of Centro Comercial, there are many opportunities to recycle building material. As walls, windows, and plumbing features are removed in various locations, the potential would exist to reincorporate them elsewhere on the property. Plumbing fixtures and windows would be relocated to the east building where they would be reused in both the changing rooms and main gym floor. The awning removed from various parts of the building would be retrofitted into a staggered metal canopy that shelters the central courtyard.

2 Stormwater Filtration

The stormwater collected from the central paved area would be diverted into a drainage swale where it would be filtered through gravel as it flows downhill. The water would then be directed into the vegetated swales at the west end of the site for further filtration and absorption into the soil. This process slows the flow of runoff, preventing erosion, and mitigates pollutants from the paved surfaces before water is reintegrated into local streams.

3 Interior Green Wall

The custom designed green wall for the proposed Monteverde Sports Club is a sustainable feature that would help filter stale air and provide an aesthetic backdrop for the gym facilities. It would further improve air quality if it were used as a bio-filter in conjunction with an air recirculation system. The structure is built vertically, accommodating seasonal or permanent plantings. Metal brackets attach to the wall which support custom made stainless steel cells that house the plants. Drip trays allow recycled greywater to move between planting cells and drain to a lower catchment tray.

4 Passive Ventilation

Passive ventilation is the natural process of air exchange within a structure. Fresh air enters through building openings on the shaded side and exits at the highest point, creating a steady, comfortable cross breeze. Passive ventilation is the least expensive and most environmentally friendly method of ventilating a space.

5 Natural Daylighting

Natural daylighting refers to the placement of windows to allow for the permeation of indirect natural sunlight into a space. Large windows along the northern wall of the gym would allow indirect light to illuminate the space during the day, reducing the need for electrical lighting and thus saving energy.

6 Eco Friendly Bamboo Flooring

Costa Rica has the largest woody bamboo diversity in Central America. At present, eight genera and thirty nine species of woody bamboos have been recorded (Montiel 2000). Bamboo is an eco-friendly alternative to hardwood flooring, growing to maturity in five to seven years. Hardwoods generally take an average of fifty to one hundred fifty years to reach the same level. The natural qualities of bamboo, particularly its durability and structural stability, make it an ideal material choice in a variety of high traffic applications. Bamboo flooring is also available in a variety of shapes, sizes and finishes and is generally less expensive than traditional hardwood flooring.
7 Recycled Rubber Gym Mats

Used tires generate the largest and most problematic source of waste around the world due to their durability and slow decomposition. Recycling tires is an effective way of combating this issue. Eco-friendly, one hundred percent recycled rubber gym mats use ground crumb rubber from used tires as the base ingredient, reducing the amount of waste entering landfills. They are durable, slip resistant, low impact and easy to maintain. Demand for this product may influence an untapped market in Costa Rica.

8 Palm Fiber Acoustic Boards

Costa Rica is one of the top ten palm oil producing countries in the world, providing a great opportunity to recycle the waste material from the production process. Palm fiber is a natural fiber obtained from the empty fruit bunch of the palm tree after the oil has been extracted. To transform the fiber into an acoustic board, the fiber is first shredded then separated, refined and dried. No toxic chemicals are used throughout its creation. Therefore, palm fiber is clean, biodegradable and environmentally friendly.
Ampitheater Seating
Pedestrian Bridge
Overflow Parking / Recreation
Gazebo
Open Air Seating
Playground
Skate Park
Bio-swales
Rain Gardens
Vehicular Access Road
Reed Bed
The main design goal for the western zone of the site is based around the creation of separate experiential conditions that use the site’s natural form to connect to one another. The design was heavily influenced by the desire to work with the existing topography, establishing a framework for the plan that divided the zone into two specific regions. The first region, the eastern portion of the zone and directly west of the proposed daycare, cafe, and recreational storage room, was designated as the public space that would contain the most programmed section of the zone because of its relatively flat topography. The second region, located at the western edge, was labeled as the private space because of its location at the lowest point of the site, where dense vegetation used for storm water management is implemented to create a more intimate space for users. A gradual transition from the more rigidly programmed public space to the more organic and natural private space thereby creates an uninterrupted connection between the two regions that allows for the most efficient use of the zone while refraining from manipulating or altering the existing conditions.

The public space was specifically programmed to create immediate connections between the built form and the landscape interventions on the lower end of the site. This region contains a skate park and a playground that both work in conjunction with the proposed daycare center in the adjacent building. Next to the playground, an area defined for outdoor seating, overlooking an open green field, provides an opportunity to create an outdoor room for the proposed cafe in the adjacent building, linking it with the landscape. In addition, a large portion of the region is dedicated to a multi-use...
area covered by “grass-pave,” a permeable pavement solution consisting of a plastic grid system that holds grass and its growing media, that could be used for both overflow parking as well as outdoor activities hosted by the proposed recreational facility. A vehicular access road to the overflow lot is provided from the southwestern point of the zone where the slope meets the road; the existing topography is used to create a dirt road spanning across the property line up to the lot. Beyond the parking area, the region’s existing terraced land form allows for the installation of amphitheater seating with a clear view of downtown Santa Elena, further enhancing the site’s ability to create connections to places outside of its immediate boundaries. As the public area extends further out into the region, the gazebo acts as the final programmatic element, serving as the beginning of the transition into private space. It will provide a covered gathering space that can be used both in conjunction with the activities taking place in the public space as well as providing a view towards Santa Elena or the forested transition space found to the west.

As the space transitions between public and private, the plantings thicken and become fragmented, and paths diverge in order to segment the space and decrease the fields of vision, gradually creating more intimate, sequestered pockets of space. Storm water management systems such as bioswales and a series of small rain gardens are utilized here to both redirect water throughout the site as well as guide circulation by creating informal paths. The organic feel of the meandering paths and the lack of a specified program in this section of the region allows for an easy transition into the last segment of the site where the existing tree line is pulled in through reforestation; this revegetation creates an enclosed and intimate space around the final rain garden, strategically located at the lowest point to gather all remaining runoff that has surpassed all other water catchment systems up to that point.

The public region of the western zone is dedicated to programmatic elements that correspond with the proposed uses of the existing building on-site. A playground and skate park area is designated for the day care center while an outdoor seating area and open green space are proposed in conjunction with the new cafe. The remainder of the space is dedicated to a multi-use, grass-paved field that may be employed as either overflow parking or outdoor activity space hosted by the proposed recreational center.
A proposed pedestrian bridge can connect the Centro Comercial with downtown Santa Elena
SUSTAINABLE ELEMENTS

1 Pedestrian Bridge

The pedestrian bridge would act as a physical and visual link from Centro Comercial to downtown Santa Elena. The proposed bridge would work to encourage pedestrian flow and reduce vehicular transportation. Its application would find its sustainable aspect in its ability to promote a walkable and healthy community. Furthermore, the materials used for the bridge are locally sourced from recyclable/reused materials. It features an educational component, allowing the visitor to view the trees from their canopy and learn about the wildlife of the area. The concept of a canopy walk is to make the user feel as if they are actually walking on the tops of the canopies, increasing environmental awareness and appreciation of nature.

2 Grasspave

To avoid paving the overflow parking area near the building with asphalt, a permeable pavement grass solution, known as Grasspave, would be implemented to maintain the space’s green and recreational properties. The system entails the use of a plastic grid where, in each of the openings, a portion of grass is placed. Its primary purpose is to prevent soil compaction, a major problem in respect to grass growth, for soil, by function, holds oxygen and air in small pockets; when the grass experiences constant loads, those pockets are eliminated, leaving the grass without the air and nutrients it needs to survive. The grid gives the grass a higher tolerance for compressive forces because of its ability to flex, negating the effects of soil compaction. Grasspave is extremely durable and can withstand large amount of weight, such as a fire truck. To allow for the rapid infiltration of water during a storm event, in its installation, Grasspave requires a sand and aggregate base.

Overall, with the use of this system, the space’s intended recreational function would be maintained while providing for the legally required parking areas for the site.

3 Bioswales

Bioswales are a landscaping technique used to slow down the velocity of stormwater flow during a storm event. The swales are a channeled depression, typically planted with deep rooted vegetation that creates friction as water passes through. Unlike concrete swales which channel water away from a site as rapidly as possible, bioswales attempt to decrease the flow of water and allow for groundwater recharge. In addition, bioswales are credited with toxin and sediment removal from storm water runoff. Applying this Low Impact Development technique in the landscape creates many benefits and reduces the amount of polluted water reaching the country’s streams and oceans. It also reduces erosion and the risk of downstream flooding associated with large volumes of water produced during storm events. Bioswales are a natural and cost effective way of handling storm water and reduce the violent impact stormwater runoff has on the environment and local ecology.

Bioswales are a visually attractive alternative to traditional concrete piping. As with all drainage techniques, bioswales need to move water away from critical areas such as buildings and roads. They must also have an outlet which can be a rain garden or other detention device that can handle the volume of water produced on site. During large storm events, water may pool temporarily within the swale, draining soon after the storm event passes.
In the design of the bioswales of the park space of Centro Comercial, concrete removed from portions of the built structure during the redesign could be utilized as another element in conjunction with the plantings to slow the runoff flow rate.

4 Rain Gardens

Among the many forms of stormwater mitigation encompassed in Low Impact Development techniques, rain gardens present themselves as an aesthetically pleasing, artful, and easy way to reduce the speed and infiltrate a large amount of runoff entering any site. The purpose of slowing the speed of the water and facilitating filtration is to prevent pollution, erosion, and sedimentation in the immediate area and in the watershed the runoff moves to.

Rain gardens, although effective, will only function properly if they are situated in an appropriate area; therefore, the areas on a site where water is determined to flow make for ideal spots. Typically, these places are found on or near downhill slopes and in close proximity to buildings, streets, and other built structures, spots that encounter a substantial amount of rainfall.

Plant selection is another important aspect in rain garden design. Although aesthetics may appear to be the primary goal, the varieties of plants chosen must be both drought and saturation tolerant to compensate for different seasons. Furthermore, they must be able to handle possible pollutants and heat gathered from the stormwater’s journey over impervious surfaces.

The composition of the soil, a mix of mulch, topsoil, and sand, is essential in terms of the infiltration of water. Because of the high volume of water the gardens encounter, water must be able to move quickly down through the soil, eventually reaching the water table and recharging groundwater.

In the design of the rain gardens of the park space of Centro Comercial, topsoil removed from other portions of the site during regrading could be utilized in the initial planting and establishment.
Figure 3.1 Typical reedbed longitudinal cross-section

Reed Bed Diagram
(Dallas, 2005)
Health, vitality, and comfort are critical concepts in the consideration of Santa Elena’s paths and the public life that supports them. Moreover, the perception of the need to invest in pedestrian infrastructure must first be established. Then, the planning should be driven by the prospect of a universally accessible public life, considering the constraints and burdens of those afflicted with physical, psychological, and economical barriers. Neglecting to address these conditions works against the progressive growth and achievements of Santa Elena and Monteverde as a whole.

The crucial question is whether or not the city, which was formerly built on the human scale, and in which the street existed primarily as a means of contact, is to be replaced by a megalopolis where the dimensions of the street are on the scale required for its primary use by mechanical transport? Are we going towards cities with [specialized] “meeting facilities”, all linked to each other by high speed motorways? (Tanghe, 1984, 6)

Tanghe’s sentiment towards the “living city” sheds light to the vulnerability of the urban centers, an organism whose vitality is measurable by the livelihood of its walkways and nourishment that provides safety and comfort for its users. Urban areas are fragile containers that sustain life and, to survive, must breathe air actively saturated with culture. It is a physiological process whose stability and functionality relies on a harmonized coordination from the complexities that constitute urban areas, similar to the balanced gears required to operate a large clock. Varying pressures stimulate the city, and, as it responds in effort to maintain its social, economic, and political identities, a physical response emerges from the disturbed condition in the form of the built environment.

Tourism in Monteverde has idealized a particular way of life, away from its tradition in agriculture to the art of hospitality; the built environment, therefore, must uphold the region’s distinctiveness. Without careful consideration, Santa Elena could abruptly become a landscape sterile of the rich customs that the community of Monteverde shares. If issues concerning the conditions of impure air, congestion which threatens to arrest public life, and the withering wellbeing of the users of Santa Elena’s paths are of great magnitude, then sustainable mobility management is not an alternative. The most motivating of the measures, sustainable mobility, seeks to alleviate the misery associated with traffic by resolving a multitude of issues concerning the quality of life dictated by the built environment. It also addresses social and environmental ecologies, beginning by reclaiming downtown’s thoroughfares.

The impression of roads is often misconstrued as a passage for vehicles; thus, change begins by shifting the psychological sentiments regarding streets. Roads should be thought of as paths that operate beyond their vehicular purpose as a conduit of social contact adapted for walkability; however, one set of means should not compromise the importance of the other. With traffic calming strategies, a harmony between these forms can materialize, and legislation does not necessarily have to be set in place for immediate results. Through thoughtful design, roads can promote reduced travel speeds as a means to enhance the overall safety of the pathway. Changes in road
surface at pedestrian crossings and even whole intersections, such as paved speed tables, raised sections of the pathway that allow both set of wheels on the top of the table surface, can greatly enhance public safety and accessibility. (CART, 1989, 24) Moreover, by encouraging a regulated flow of traffic with strategically designed landscaping, such as planters, vegetation, and spaces for leisure, the reception of downtown has the potential to return a sense of calm to the city and the region as a whole.

In order to ensure healthy growth in Santa Elena, downtown should evolve in tandem with the Centro Comercial site. If these two areas become attractive to pedestrians while having easy access to each other, they could form a compound of commercial and community services that would be appealing to residents, tourists, and business investors. These maps show a possible evolution of the use of space in downtown Santa Elena.

The above right section shows a narrowed street with wider sidewalks, added seating and vegetation, and also a stormwater mitigation swale.
3. Initial stages of pedestrian-friendly development, including two viewing platforms, and a link between the new parking lot and the open space in front of the Salon.

4. Development of remaining pedestrian zones including the plaza between the church and Bar Amigos, platforms linked to become a bridge.
Existing conditions of the space in front of the Salon

Conceptual Rendering:
Additional concrete combined with stone masonry to match the existing flagpole fountain breaks down the division between the sidewalk and the space itself, while creating planters, seating, variable privacy, and more engaging entrances.
1 Reinvented Street Gutter System
2 Plantings
3 Walkability
SUSTAINABLE ELEMENTS

1 Reinvented Street Gutter System

Crushed cinderblock recycled from the Centro Comercial building alterations could be used to create bioswales along the streetside drainage ditches. This aggregate would be held in place by intermittent wire mesh barriers made nearly invisible by the surrounding rubble. Recycled material from sections of the existing concrete gutters would supplement the aggregate by accommodating plantings and allowing for some groundwater recharge. The soil beneath these sections would be held in place by the root systems of the plants, and erosion would be reduced because of the slower flow rates achieved by the aggregate blockage.

2 Plantings

Vegetation in an urban setting is beneficial in several different ways. Plants naturally remove carbon dioxide from the air and also cool the temperature of the area in which they grow by providing shade and absorbing heat into their water-filled biomass. Furthermore, they can provide visual appeal to a highly developed area by adding a green, natural touch to the surrounding manmade material palette. These healthy characteristics of urban plantings contribute to the appeal of the streetscape in which they are applied, inviting pedestrian use. The plantings would act as part of the stormwater mitigation system but could also be applied in an earlier stage through the use of portable or permanent planters. If native plantings were used in downtown Santa Elena, people would have an appreciation for the surrounding environment even in the most densely developed part of town.

3 Walkability

Walkability is the idea of designing a space to favor the pedestrian over the automobile. Complementary to this idea is the intent to improve the health of residents living within walkable neighborhoods. Reducing automobile use in an area like Santa Elena would contribute to cleaner air, increased physical activity, and improvement in the safety of the streetscape for pedestrians. Some strategies for achieving better walkability that could be implemented in downtown include widening the sidewalks, adding public seating, planting vegetation, implementing crosswalks, and providing rain protection. With creative design, some of these elements could be integrated with each other, such as a planter that also acts as a bench or an awning that is hidden by vines or trees. Catering to pedestrians and making a solid walkable connection to Centro Comercial would be a way to ensure the vitality of businesses in downtown Santa Elena because the area could aesthetically evolve into an attractive destination and a pleasant place to spend more than just a few hours.
PART VII: CONCLUSIONS
As history has shown, the concept of a commercial center in Santa Elena was a misguided vision based on the region’s economic and social needs. As it stands, Centro Comercial is a failing facility, unable to entice business investors and attract local patronage. Currently, it rests at a critical point and would benefit from forward thinking investors willing to reinvent its use and purpose. Directly involving the community at the onset would inform investors of the desires and concerns of the local population. By addressing some of these needs, savvy business owners could capitalize on an underserved market, combining elements of community, education, ecology, entertainment, and retail in the overall design.

Outlined in this report are a number of community needs that can be fulfilled through the adaptive reuse of Centro Comercial, working to earn the peoples’ approval and igniting area commerce. The framework analyzes the site’s positive features, including its central location relative to downtown Santa Elena, and offers suggestions for its success. In order to start the process of designing the master plan for the CCM, the new management would benefit from collaborative efforts with local community and environmental leaders. This endeavor would ensure the support of the people of Monteverde, increasing the economic potential of the development.

To optimize the efficiency of the built structure and landscape, sustainable strategies must be carefully planned and applied. Advanced planning will benefit not only the precious local ecology but also increase the cost efficiency and cultural desirability of the CCM.

How to organize efforts?

Many ways exist to approach the adaptive reuse of the CCM. Preliminary steps would focus on organizing an open dialogue between investors and community members to map a practical and sustainable course for the future of the site. Careful preliminary planning from the early stages would encourage the economic, environmental, and cultural success of the project.
WORKS CITED


Feasability Study of Sustainable Sanitation Options for Santa Elena in the Zone of Monteverde. Sustainable Futures Program, Monteverde Institute. 2002


PART VIII: APPENDIX
WHY CHOOSE SUSTAINABILITY

Sustainable building designs and practices provide a substantial benefit to the environment, defining the driving force of Monteverde’s current, eco-tourist economy. Implementing sustainable design principles also allows for business owners to create a focus for their marketing schemes and agendas and minimize operating costs. Financially, the sustainable interventions would pay for themselves within a few years and afterwards result in reduced expenditures for the owner. To trim current building renovation costs, recycled materials from the site and other locations could be implemented into the building’s fabric. Another early phase design principle that can be applied to the building in its current state is the elimination of unnecessary finishes and features. This modification would reduce building costs and allow for other design solutions that explore the structural composition of the building. This technique of exposing the building’s structure in some instances would allow for the spaces to take specific internal forms and reuse of the existing, removed building materials in other spaces.

Implementing sustainable features will increase costs in some areas but will dramatically reduce the costs in other areas which would save money in the long term. Facilities could reduce potable water costs by using rainwater collection systems to supplement landscaping and bathroom amenities. In addition, sustainable landscaping would decrease costs associated with fertilizers and plant growth. Also, the implementation of bioretention cells would prove to be cost-effective and also create habitats for local wildlife, bringing potential customers into the site.

Studies have shown that sustainable buildings result in increased productivity, fewer errors, and less absences for the average worker, a good marketing strategy for potential clientele. Other economic benefits to the owner include lower complaints, building longevity, enhanced resale value, and an improved image. Indirectly, sustainable practices would aim to reduce negative impacts on the earth while improving the local ecology, a practice everyone can live with.

PARKING POLICY:

Pedestrians Have Rights

In every city of the world the volume of traffic is limited, intentionally or unintentionally, by measures adopted by governments. If these measures were relaxed, there would be more traffic; if they were strengthened, there would be less. In other words, the volume of traffic in a city is not something like the rainfall that has to be accepted… (OECD 1978, 132)

Due to the restrictive parking policies dictated by the Costa Rican government, all new developments are required to allocate on-site parking based on the size and purpose of each individual commercial unit. Currently, the CCM maintains a total of sixty four parking spaces which is an inadequate amount if the site were to be fully occupied. Referencing the current floor plan and the policies set forth by the national government, the CCM would need to provide a total of one hundred parking spaces, consuming large portions of land on the lower section of the site.

The master plan set forth in this report proposes a mixed use building program that accommodates commercial, office, retail, and entertainment use. Based on the program needs, the CCM needs to provide eighty parking spaces. To meet the current legal parking requirements, the preliminary proposal recommends re-grading the landscape in various areas to allow for overflow parking. Alternatively, the final master plan examines the reduction of public parking by applying for site-specific rezoning. Achieving this goal will open up much needed land within the Santa Elena area and allow for alternative land use, including central...
courtyards and outdoor recreational space.

Based on research and observation, this document identifies a low occurrence of automobile usage within the Monteverde region. A 2005 Sustainable Futures Report on Santa Elena Traffic Trends identifies a huge discrepancy between automobile and pedestrian traffic. The two day transportation study identifies pedestrian traffic at sixty six percent, automobiles (including taxis) at sixteen percent, motorcycles at seven percent, and buses at four percent. Based on these figures it is imperative to spark a debate amongst the community regarding the future of Downtown Santa Elena and the district of Monteverde, and for those simply concerned for the future of their region. With a lack of planning and approach, the past will undoubtedly dictate the future. The community must be given the opportunity to innovatively shape its future.

Due to Monteverde’s unique transportation trends, this report suggests that developers apply for site-specific rezoning that addresses actual local parking needs and not those set forth by authorities in Puntarenas, a city requiring different parking policies to Monteverde. Encouraging the continuous use of alternative forms of transportation within the Monteverde region will work to reduce excessive surface parking outside the

CAPITULO XVIII

ESPACIOS DE ESTACIONAMIENTOS

ARTÍCULO XVIII.1.- Oficinas públicas y particulares. En exceso de doscientos metros cuadrados (200 m2) de construcción, todo edificio destinado a oficinas deberá dejar un espacio para estacionamiento por cada cien metros cuadrados (100 m2) o fracción mayor de 50 m2 adicionales de área bruta de construcción.

ARTÍCULO XVIII.2.- Comercio. En exceso de cien metros cuadrados de construcción (100 m2), para los edificios de uso comercial se considerará un estacionamiento por cada cincuenta metros cuadrados (50 m2) de área comercial neta o fracción mayor de 25 m2 adicionales.

En centros comerciales planificados se considerará un estacionamiento por cada 50 m2 de construcción excluyendo áreas de circulación y servicios sanitarios.

ARTÍCULO XVIII.3.- Viviendas.
con la capacidad máxima del local.

ARTÍCULO XVIII.6.- Restaurantes y cafeterías. Los locales destinados a cafeterías o restaurantes, cuya área exceda de ciento cincuenta metros cuadrados (150 m2) de construcción, deberán prever un espacio de estacionamiento por cada veinticinco metros cuadrados (25 m2) en exceso de 150 m2 de área de ventas utilizable.

ARTÍCULO XVIII.7.- Industrias y depósitos. Los locales destinados a industria y depósitos deberán contar con un espacio de estacionamiento como mínimo. En exceso de ciento cincuenta metros cuadrados (150 m2) se deberá proveer un espacio adicional por cada ciento cincuenta metros cuadrados o fracción mayor de 75 m2.

En casos calificados, según tipo de industria, el INVU y el Ministerio de Salud podrán aceptar un número menor de estacionamientos.

ARTÍCULO XVIII.8.- Centros sociales. Se proveerá un espacio de estacionamiento por cada quince metros cuadrados (15 m2) o fracción mayor de ocho de área de piso destinada al público.

ARTÍCULO XVIII.9.- Locales de culto, centros de enseñanza y edificios comunales. Se deberá prever un espacio para estacionamiento por cada cien metros cuadrados (100 m2) de área de piso excluyendo circulaciones y servicios sanitarios o por cada cuarenta (40) asientos o personas suponiendo la capacidad máxima, cualquiera que resulte en un número mayor.

ARTÍCULO XVIII. 10.- Dimensiones mínimas. Para los efectos de este capítulo, se entiende por espacio para estacionamiento un área con dimensiones no menores de cinco metros y medio por dos sesenta metros netos (5,50 m x 2,60 m) más las áreas de acceso y de maniobras correspondientes.

ARTÍCULO XVIII. 11.- Ubicación. En caso de que por la ubicación o características del terreno se haga difícil la provisión de los espacios requeridos para estacionamiento en el edificio, el propietario podrá pagar a la municipalidad, si ésta lo acepta, el costo requerido para que dicho espacio sea suplido por ésta en otro sitio.

También podrá el propietario proveer los espacios de estacionamiento requeridos por su edificio en otro lote, previa aprobación de la municipalidad respectiva, siempre que no se exceda una distancia de doscientos metros (200 m) medida a lo largo de las vías públicas, entre las entradas del edificio y el área del establecimiento.

En el caso de que la demanda de estacionamiento correspondiente a varios usos se presente en horas o días diferentes, el espacio de estacionamiento previsto para ellos conjuntamente, puede ser acreditado en total a cada uno de los mismos.

CAPÍTULO XII

AGUA

ARTÍCULO 50.- Dominio público del agua

El agua es de dominio público, su conservación y uso sostenible son de interés social.

ARTÍCULO 51.- Criterios

Para la conservación y el uso sostenible del agua, deben aplicarse, entre otros, los siguientes criterios:

a) Proteger, conservar y, en lo posible, recuperar los ecosistemas acuáticos y los elementos que intervienen en el ciclo hidrológico.
b) Proteger los ecosistemas que permiten regular el régimen hídrico.

c) Mantener el equilibrio del sistema agua, protegiendo cada uno de los componentes de las cuencas hidrográficas.

LOCAL HUMAN DEVELOPMENT PLAN

The Local Human Development Plan, or “el Plan de Desarrollo Humano Local,” was a document compiled by the Municipality of Monteverde in 2009. The contents and results of the document originated from multiple community meetings and a serious survey of a representative selection of the people of Monteverde. In the endeavor, one of the main focuses was to ascertain the long-running desires and needs of the community. Therefore, the community values and respects the contents of this document immensely. The information provided was a primary resource in terms of the cultural research of this report.
Plantas Nativas de Monteverde

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PRECEDENTS : Mobility

The Emerald Necklace
Boston, Massachusetts, United States

Trail Restrooms
Austin, Texas, United States

Green Light for Midtown
New York City, New York, United States

La Avenida Central
San Jose, Costa Rica

Plaza Conchal
Tamarindo, Costa Rica

Woonerf Concept
Netherlands

6BC Botanical Garden
New York City, New York, United States
PRECEDENTS: Culture & Built Form

Glorya Kaufman Dance Center
Alice Tully Hall, Lincoln Center
New York City, New York, United States

Hillside Terrace Complex
Tokyo, Japan

Art Exhibition
Artomatic
Navy Yard, Washington DC, United States

Downtown Santa Elena
Monteverde, Puntarenas, Costa Rica

Gymnasium
Gary Comer Youth Center
Chicago, Illinois, United States
CONNECTED: Ecology

Connecticut Water Treatment Facility
New Haven, Connecticut, United States

Experimental Stormwater Parking Lot
EPA Edison Environmental Center
Edison, New Jersey, United States

Solar Aquatic System

Reed Bed Water Treatment System
Monteverde Institute
Monteverde, Puntarenas, Costa Rica

Monteverde Reserve
Monteverde, Puntarenas, Costa Rica

Shangri La Botanical Gardens
Orange, Texas, United States