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PROJECT DESCRIPTION

Located in a difficult mountainous terrain of Caracas, "La Vega" is one of the biggest spontaneous establishments of the city, with 400 Ha. and 95,000 inhabitants. This project was developed as part of the National Program of Rehabilitation for informal settlements, financed by the National Government and the World Bank. The program displays an ambitious social vision that exceeds the scale of individual interventions, aiming to effectively integrate spontaneous settlements with the formal city, focusing in the improvement of the urban spaces, accessibility and services; trying not to affect the existing dwellings. After a detailed Preliminary Urban Project which led us know the settlement in detail from the physic and social points of view and to develop a confidence relationship with the inhabitants our conclusions were:

- Topography is the most determinant condition because of the very steep slopes
- Difficult accessibility is the main problem.
- Services are precarious and following no specific plan.
- There are almost no public spaces or urban equipment in the zone.

In response to these conclusions, we fixed the goals to fulfill the community demands. We needed to design new roads to improve the accessibility of the high zones, create a procedure to solve the stairs design as a service route which included the walk way, its adjacent public spaces and all the services required as electricity, drainage, sewer, gas and water; and finally produce adequate terrains to develop urban equipment.

Following these premises a new road system was designed, with a main street following the top of the hills, in order to diminish the earthwork and at the same time generating suitable flat space to develop the equipment buildings. A secondary road connected the existing streets allowing public transport circulation by the sector.

Pedestrian network was classified into private stairs to be maintained by neighbors constituted in condominiums, and public ones that shall be reconstructed as part of this program. This job constituted the main part of the project. In many cases the available space for the walk way is scarcely one and a half meter wide, and the slope greater than 50% so finding the suitable solutions became a real challenge.

To solve the contact of the sector with the rest of "La Vega" one of the most interesting proposals arose. In this front towards a main road almost all the problems of informal establishments can be seen: instability, garbage disposal, landslides, lack of pedestrian spaces and visual contamination. The Urban Facade, is a no conventional building, practically without internal spaces, where the strong structure of regular rhythm supports a series of squares and corridors at different levels, communicating the street with various public stairs without intervening the existing slope and walls. We can anticipate that this front construction, planed to be one of the first stages, will move forward the upgrading program and will contribute to reinforce the sector identity as it will be the new face of San Rafael-Unido.

PROJECT DATA

The project included a few public buildings; two schools, two communal centers, sport facilities and the preliminary project for a community private club. All these buildings construction depends of the new roads, so they have to be constructed during the last stages.

BASIC DATA

Title:	UPGRADING SAN RAFAEL – UNIDO Integral Urban Project	
City:	CARACAS	
Country:	VENEZUELA	
Project Type:	URBAN UPGRADING-URBAN DESIGN	
Project Development	July 2003- June 2004	
Previous Stages:	1999	Planning Team Selection Contest
	2000	Site Analysis-Urban Master Plan
	2001	Urban Master Plan Approval
	2001-2003	Construction of small pilot-projects
	2004	Global Community's approval Assembly
Start of Construction:	August 2005	Beginning The bidding procedures for the first work fronts
Client:	FUNDACOMÚN - CAMEBA is an institution specially created by the National Government to lead the implementation of this program.	
Financial Entity:	World Bank- Central Government	

THE SITE IN NUMBERS

Area extension :	26 Has
Type of ground:	50% slopes with gradient higher than 60%
Vertical distance to streets	equivalent to 47 floors
Densely occupied	18 Ha. 450 hab/Ha.
Population :	5000 inhabitants
Geological Risk Area:	8 Has
Landslide Episodes:	In 1983 with dozens of fatal casualties and 2004
Existing Living Units :	1000 units (good % , precarious
Existing roads	650 m (two cul-de-sac streets / 25% slope)

THE PROJECT IN NUMBERS

Units subject to demolition:	41 units (4.00%)
Substitution Units	90 apartments
New vehicular network	2775 m. / 30 stairs
New Pedestrian network	1505 / 3 roads
Public Buildings	7000 m2 / Primary School / Secondary School / Communal Centers(2) / Urban Façade.

QUANTUM CHANGE AND TRANSFERABILITY

The problem of uncontrolled urbanization is common to many cities in the world and in Latin America. It is a problem which governments had been struggling with for years; the high land values and the enormous demand for space that force all those poor into squatter settlements known in Venezuela as "barrios". These informal urban settlements grow spontaneously and in an accelerated way, generating all sorts of social, ecological, political and structural chaos.

In our case to the previous we have to add the special nature of the city developed in a valley, where the possibility of growth is limited by the surrounding mountains of steep slopes. These renegade suburbs in our city normally occur in those steeped mountains, making the problem even bigger because of the slopes, the nature of land and the access difficulty.

New Techniques and Methods for Urban analysis

The experience of several upgrade projects led to define the constants which now qualify this process as transferable (can be used by another organizations and in other settlements). The urban analysis is based on the dominating aspects to most informal habitats.

We are treading through an experimental area of development. The emerging new philosophy "accepting slums as a new form of urban morphology" has been introduced world wide. Our project has 2 levels of action that try to achieve a comprehensive approach on upgrade:

A) Physical Intervention:

The goal is the integration of these areas to the formal city by introducing or correcting urban qualities actually lacking, adapting new elements as gently as possible to the existing physical configuration and topology. Our vision of such Upgrading Projects after experiences in different slum areas is based on three urban planning tools: These concept tools are applicable to every informal settlement, either on flat or steep land, with dense or loose occupational patterns, legally owned or result of invasion. The emphasis ratio on each element differs in each settlement.

- Relational Node

This element is supposed to be a structure of contact of restored area with formal city or surrounding areas. This "entrance" to a developing neighborhood would include transport services, local facilities and community areas which will project a distinctive image or "identity" for this particular area which before the upgrade process was part of an anonymous continuum.

- Accessibility Network

The vehicular/pedestrian network, meant to solve one of informality's greatest problems, will fulfill not only needs of circulation, but provide routes for visible water utilities. It will also link the new contact spaces. The usual condition of public sanitation network is chaotic, main lines are frequently covered with structures, impossible to maintain and repair, due to continuous improvisation and

densification process. Consolidating a joint network on which failure can be easily detected and repaired is the primary objective.

Anti-sprawl Borderline

The greater threat to successful upgrading processes is the growth factor. The renewed infrastructure acts as a magnet, attracting even current dwellers who will try to obtain more land close to their relatives and build a new belt of informality around it. This iteration (upgrade-new invasion belt, new upgrade and so on) is a mechanism of permanent deterioration of infrastructure, never measuring-up to ever increasing demands, and preventing a sustainable consolidation of the area.

Developing a hard core made up of public buildings, condominiums and other uses under the responsibility of a legal figure (as opposed to the private occupant) that require a higher level of maintenance and organization, will prevent some particular to irregularly plug into the common pipe since there is no access to this publicly controlled border. Whatever irregularities occur to the lenient eye of a neighbor, will be difficult to impose on an organized community.

If the settlement is an enclosed pocket within the city the borderline factor becomes less important but the other two become prime objectives while if its location is within a protection area the emphasis would be placed in the growth control.

B) Social Empowerment & Appropriation of process

On the social level the support tools that we develop in the project and are applicable to other settlements are two:

- Adding multiple support forces Community Participation and Private sector support: The Informal settlement is a space in the city, where different endogenous social, cultural and economical dynamics prevail, subtly expressed by informal economy, solidarity nets, power structure, etc. The recognition of their dynamics and its strengthening is the starting point for our intervention. We are not to impose a project but to consolidate their activity and ensure their goals are met and their rights are formally recognized. Since the project is, from the beginning, a participatory activity shared by community and professionals, it gathers wide support while being developed. Traditional institutional help has been made up from pieces of uncoordinated local works without previous planning, which ended up deteriorating instead of improving their conditions.

Private sector represented in landowners, retail investors and developers are aware that a closer relation to people increases the chance for the area to develop into a productive sector. If this relation fails the formal sector is risking control; in other words the risk of eviction is higher for the formal sector, high risk vandalized areas attract no businesses. Local government agencies must find mechanisms flexible enough to try joint ventures and innovative management including the private sector not only through taxes but in a more cooperative approach. Gathering the support of all sectors involved, increases the chance to see the project built and functioning.

- Capacity building: Self-construction as training for project appropriation. Community's excessive dependence on governmental agencies is not desirable since it does not lead the community to a real empowerment situation, when they

will fend for their problems as normal citizens in the formal city, demanding quality service for their taxes. In the annex we expose in more detail how the self construction can help to achieve the goals of the Upgrading Program.

The stairs: non conventional solutions, normative flexibility and new constructive systems.

The main pedestrian access ways are stairs that normally have been made by parts: every new inhabitant built its "rancho" and the piece of stair he needs to get to it from the nearest street. It have produced walk ways with very limited width, variable steps size, no handrails, high slopes, and in the higher sectors no stair.

Having to reach all the houses without modifying them was then a main challenge, and some very creative solutions came out of this exercise. The ways of making the site surveys, the best dimensions of the steps, the size and form of the drainage channels, and even the drawings needed to construct, all have to be adapted for the project, and all these knowledge will be useful in other settlements. In Spanish we talk about a new science "Escaleroología", or the science of designing stairs. As we were working in almost the most extreme conditions in terms of density and topography, in most of the settlements this issue will be easier to solve.

Perhaps the main achievement of this project was the technique developed to solve these stairs or "walk ways" as service containers, through which drainage, gas, water, sewer and electricity gets, in a planed way.

A new set of rules were defined, that we can summarize as follow:

- The minimum width of a public stair is 1 m. plus 0.5 additional for drainage channels.
- There should be not more than 20 continuous steps.
- The steps can be higher than what the normal rules established, but they should be as regular as possible.
- Every stairs needs at least one hand rail. When possible, both hand rails are better. They help to elder and disable people.
- The drainage network has to be open to facilitate its maintenance, as many people use it for garbage disposal. The closed parts should be as short as possible. The net has to support as least the double of water volume than the one resulting for calculations for formal areas.
- The electrical and clean water networks must be put outside the concrete stair, to make the new connections easier.
- The sewer network, although closed, needs frequent places for local connections.
- The materials, specially the concrete for the steps, should be as high quality as possible, even if the structural calculations dictate simpler mixes.

These technical guidelines must evolve into a proven manual after completion and evaluation.

The stairs channeling main pipes have been programmed to be built with a semi industrial method to guaranty the quality and facilitate the work because while on construction the access to many houses will be blocked.

The system includes a simple design of metal molds that allow unqualified work force to achieve perfect finish and cuts costly wood preparation for concrete to be poured.

ETHICAL STANDARDS AND SOCIAL EQUITY

There are not many opportunities for excluded sectors from the society and the city of being taken care of in such an integral way as it was done with this Upgrading National Program, jointly financed by the National Government and the World Bank.

The emphasis will be on converting and upgrading the current structures with limited demolition and displacement, so as to preserve social networks that exist within La Vega. Residents will play a crucial role in the overall redevelopment process, so as to minimize negative outcomes.

Community participation in the decision making

Community participation is the key to achieving a long-term sustainability in La Vega that will best serve the needs of its residents. The roll assigned to the community was the active participation in the decision making and the establishment of its priorities,

The project is also significant in that it promotes the creation of new jobs and skills transfer throughout the local population, thereby empowering the community's decision-making capacities to improve the quality of life. A sensitive ethical position is thus forwarded, one that emphasizes collectively driven design processes.

From the beginning all the inhabitants of "La Vega" were invited to take part of the process and make decisions about their main needs and priorities. The Government agency leading the program CAMEBA gave constant training and response to the community in order to prepare them to accomplish every phase and how to do it. The main angles of social upgrade are the building capacity and the participative planning. Those elements backed by a true institutional support will certainly generate a cascade of positive effects.

In a recent forum about Social Housing a community representative expressed the situation very plainly "I understand you think our *barrio* has bad living conditions but I don't want to live in your sector. You never talk to your neighbor and your house is like a cage you dare not come out of. On my way home from work I drink a beer with some friends, everybody knows me, I feel I belong". There was a long applause. Our target population has a point there. Do they want to replicate formal? Maybe not. They are different not worse or better. Those feelings show us planners, that we are not in this process to teach, but rather to learn what elements to strengthen. The participative issue is a real need.

After the last approval assembly held for our project, one of the community representatives asked for the speaker and made a simple statement " We want you to be our architects from now on". We felt the happiness of acceptance and the deep commitment to really support this community; the weight of responsibility to them. The acceptance of our planning team as their architects made us feel very proud and fulfilled to have reached that rapport with a collective client.

All the sessions over the past three years, explaining the blueprints to our clients who in turn explained other neighbor really made some difference. The project was their product not ours. Communication was not always easy because we need to learn their language to correctly interpret their needs in order to convey them the options and choices we face. At the beginning we found rejection towards public areas, and it was difficult to understand why, until we realized the risk of drug dealers taking control of them, an obvious fact for locals; that we began working on models that showed several possibilities of control.

The success of upgrade depends on applying the process rationally and holistically because if it is perceived as the only or the easiest way to obtain a house, the illegal occupation of land will increase to an extent of overflowing any countries' capacity to control it. If applied alongside simultaneous policies: an increased offer of low cost units, a firm restriction of the sprawl on geological unstable land and credit for improvements, the process has a good chance to succeed and expand its action range.

The academic sector is beginning to expose the possibilities to new professionals and might help to scientific evaluation and data collection to the continuity of this group of policies.

Priority in community problems solving over individual ones.

The most important key to the success of the project was making people conscious that the main issue was to solve community problems and not particular cases, for the benefit of all. In these communities inhabitants are used to go for their particular problem solving and it is difficult to get them to see the importance of solving first general problems that affect an important portion of the community.

Political transparency correctness and stakeholders' participation

The whole process was signed by the transparency and the respect of everybody's rights; was the multidisciplinary work of different components of the society, each of them giving the best of their knowledge. The government assigned a public organism CAMEBA the roll of contracting and supervising the project and creating the contact between planners and community. World Bank contributed with 60% of the costs but established certain conditions and procedures and supervised the whole process including Govern organism **CAMEBA** and planners **PROYECTOS ARQUI 5**. One of World Banks requirement was that every part of the project should be approved by the community, and that request lead to a respectful and profitable work relationship between all the parts involved.

The huge frame in which this project is included lead to the necessity to establish restrictions to the intervention as the one that limited particular houses affectation unless it was mandatory for a main communitarian project. Even if, there were previsions made for those people who need to be relocad, in order to do so in the less harming and planned way. The Substitution Dwellings were designed with that objective. They consist on a group of buildings with the necessary number of apartments to move in the people whose houses interfere with a major intervention. This type of decision was concerted with the community. The new roads which were the interventions that demanded more family re-settlements were planed to pass through the most deprived zones, so the inhabitants that had to be moved were willing to. A very well established politic was developed for this procedure, and the new apartment area will be very similar to the one they actually own. In order to facilitate this policy the building designed housed different apartment types.

Even further details were taken into account. Inhabitants whose houses should be demolished could decide if they wanted to move to the new buildings, if they wanted the money, or if they wanted to move somewhere else in the neighborhood. Sociologists, social workers, planners, lawyers and a multidisciplinary team took care of this negotiation.

Formation of socially viable environments and community

The social environment is another element that becomes highly benefited with this type of projects. Helping the community to make decisions and to work together for a common goal generates a healthy relationship between neighbors and promotes its values. We had the

opportunity to witness the difference when all of their opinions count for the decision making, when the goals were result of the communitarian work and not a gift from the government. As active participants of the work all the inhabitants were much more conscious of the need to take good care of public spaces, maintenance and respectful relationship with neighbors.

Integrate spontaneous settlements to the formal city

We really trust to reach successfully the main goal established, to integrate these communities to the formal city and to provide them with proper public spaces that facilitate social interaction and exchange among residents. Besides the lack of those spaces indispensable for a sane communitarian living the other element required and not less important to achieve the integration mentioned is the services upgrade.

Ethic principles points out the social justice of provide these settlements with a service network equivalent to the one in the formal city and all the efforts are focused towards that direction.

The basis of upgrading informal settlements is to cope with a late recognition of the rights of huge populations living in an infra-city. The emerging new philosophy "accepting slums as a new form of urban morphology that should not be destroyed but rather changed, improved and converted into a modest but livable neighborhood" as expressed by Professor Oriol Bohigas reflects the conceptual change that supports this project.

Key words like eradication, segregation and mutilation of social ties, have been substituted by integration, strengthening and empowerment in this project.

The usual isolated interventions, very useful to political campaigns but very harmful to the community, have been substituted by a comprehensive approach. The social issues are taken into account as a whole together with the physical issues. The project will not be imposed; all stakeholders now participate and prepare their representatives to receive command of the project and achieve its realization.

Opponents of upgrade projects argue that costs are higher compared to the construction of new developments on more adequate land. Those in favor argue for the postponed rights of this evident mass of city dwellers, about the accuracy of this remark, not including the cost of eviction processes in which the social support network for target population would be damaged by the relocation approach. Over the issue of location related to jobs or transport, there are hidden costs, since elsewhere that infrastructure would have to be replicated out of nothing, a very delicate challenge on its own.

We are sure when such a big chunk of a city has become informal there is no way to uproot this amount of citizens and replace their houses somewhere else. The emerging forces cannot be ignored for long. The failed policies that led to this point are irrelevant to this essay. The question is if these citizens have the right to stay in areas they have occupied and invested on for a long time. It seems a matter of justice.

ECOLOGICAL QUALITY AND ENERGY SAVING

To really comprehend the problem we are managing, we should begin by saying that this settlement is occupying a sector of the city that should have never been urbanized, if the city codes had been applied.

Restraining the uncontrolled growth of the settlement

We could say that where we found a highly degraded atmosphere, because of the lack of services and the anarchy of the emplacement our contribution will be to help stop the uncontrolled growth and to rehabilitate the services and connections. This will be accomplished by assigning specific uses to the lots of terrain obtained from the project's skillful management of earth work, while designing the road that surrounds the area.

Urban Equipment projects were made for each one of these terraces of land and validated by the community in order to erect them as guarantors of those spaces. Once the people is aware of the benefits they will receive from each of those projects all of them were alert to prevent invasions.

Services upgrade in occupied areas

For the portions of land already occupied, which are the most, the proposition was to reorganize services and establish procedures for further incorporations in order to prevent health hazard of the sector. Until now, the procedure to construct a new "rancho" has been elementary. They raise a room and construct the piece of stairs needed to get to it, and the services are solved in a private and informal way. As years pass by and a plumbing problem occurs, nobody knows where the services pass by or any other relevant information. With the proposed new procedure there is the guarantee that all the houses sewer are attached to the line of services that goes under de stairs, that rain water runs by an appropriate channel, that water may reach as high as the stair goes. This will contribute to rehabilitate the zone because no more residuary water should be running freely over the ground becoming a constant risk of a hurl down especially during the rain season. Solving the drainage existing problems through the channels incorporated along all of the stairs prevent soil erosion and health hazard because of the stand still water.

Once public services like water and electricity are formalized, their use should rationalize, first because there will be no more illegal connections with the subsequent waste of energy and natural resources, and then because they will pay for the service as any citizen.

Preservation of geologically frail areas

We tried to take advantage of the interventions to stabilize fragile zones and to use with criterion those of high risk, which left without treating, constitute a danger for the community. The best example of it is the main piece of this project, THE URBAN FRONT that threads a quite precarious edge, which actually has many partial interventions, into an integrated structure specially created to distribute walk ways and shelter many public spaces for social interrelations and enjoyment.

The geological study divides the land in two areas, one of high risk, "Cerro Las Madres", were landslide episodes had occurred and was banned to development and the rest, considered stable providing sanitation works to protect the built areas. The community is

conscious of the risk but they can't prevent the irregular invasions and were never able to avoid the occupation of the area without institutional assistance, it is evident that eviction must be carried out by authorities. The scarce houses located in it were marked as imperative for relocation and a informative campaign was recommended to make inhabitants aware of the hazard that represents the urbanization of this sector.

Efficiency of land use

By redeveloping this sector we seek land use efficiency. Once services are rehabilitated the no constructed land can really become green space for inhabitants' enjoyment, the spaces between houses become real pedestrian's ways with adequate and comfortable characteristics, and urban equipment may develop in proper land created and reserved specially for them.

As it happens in a puzzle, when all the pieces of the project get together really important problems seems to solve. Having at least a proper road that permits transit around the area, proper walk ways that connect the whole sector, specific places destined for garbage disposal and an upgraded net of services the positive ecological impact should be impossible to hide.

Quality of the water services

In our study area, garbage collection is limited to the nearest border against the city, "Carretera Negra". Most areas are excluded from this service; garbage accumulates on the few streets available, severely obstructing limited vehicular space. The project includes easy access to small local collection spot which shall be taken care of by local neighbors. This spot shouldn't be more than 100 meters from the farthest house. The garbage timely transport to a vehicular access will be managed collectively by the small community according to their own convenience. They already have developed some arrangements of this sort.

Garbage collection is expanded into new roads but there is still numerous paths where a vehicle cannot reach. Communal collection spaces have been included in stairs planned to transform into a condominium, so this particular group can organize a collection device in connection to recycling micro enterprises which might absorb this branch routes in order to obtain and sort different materials for recuperation. Municipal garbage Collection Agencies are interested in creating associations with communities to expand the collection network.

Reforest projects must be implemented to replace vegetation lost to help ease storm water effects. The surrounding control belt and individual construction projects include green areas and small farm land controlled by public or communal institutions.

The sewage plan is a prime factor in risk control for this area since leaking pipes difficult maintenance are the usual conditions, and the subsequent deterioration of the metamorphic rocks is an irreversible condition which must be controlled as effectively as possible. New sanitation will be preserved only if horizontal growth control succeeds. Adapted to new standards it becomes a stabilization factor because leaking pipes are bound to saturate the soil weakening the support and in time create prone to land slides areas.

UPGRADING SAN RAFAEL-UNIDO • Integral Urban Project • LA VEGA

Actual water supply to Barrio Unido San Rafael has a cycle of 8 days: 4 pumping and 4 resting to redirect fluid to other areas. The 4 days active period takes 2 days to fill the local network pipes until it gradually reaches higher levels on the 7th day just before interrupting the service again. This means some sectors receive water once a week.

Water reserve tanks on high ground will guaranty permanent supplies by gravity. Solar batteries are bound to provide energy to pump these reserves to high ground but the security for these installations must be negotiated with some community organization. The project was under consultation with the city's water Company which approved the general proposal and is including them on the investment plan.

As it was



As it is

ECONOMIC PERFORMANCE AND COMPATIBILITY

The usual procedure to satisfy the demands coming from slum areas was carried through multiple donations to communities from different social oriented agencies, either municipal or central. Sometimes donations were in materials, or machinery; results expensive, ephemeral and sometimes implied greater risks (like unprofessional water channels that have caused frequent tragedies in cases of heavy rain in the past . Frequent demolition of the uncoordinated works was required before a forced rebuilding, thus multiplying the cost.

The Urban legislation now requires a comprehensive plan before allocating public funds. Charity must be abandoned to favor structured plans with legal allocations on the official budget.

Prioritized goals help optimize use of resources

The material goals having been proposed and affirmed by an absolute majority will translate into a letter of intention with official planning agencies. These can allocate the public resources to most urgent projects with anticipation and provide a realistic flow chart to their new tax payers.

Generation of Rental space

The project is to provide financial tools directly to the community. The management of financial resources is a challenge that will help the community to react and abandon the passive role they have traditionally held. The situation before the upgrade project is a general distrust, no one wants to be responsible for common resources, and the lack of reserves hinders common projects

Financial resources for the project phase come from an Inter American Dev Bank loan but they only cover the construction of basic road and water infrastructure and one civic center.

This leaves the financing of all public buildings, schools, recreational and house repairs to the incipient entrepreneurship of the recently organized community, which is no light burden.

Returns in taxes and service charges savings in transport are important but sum a small portion of developing costs on steep grounds, thus the project might be tagged unsustainable by its bare internal return ratio in terms of public investment allocations. The return on investment ratio must be complemented with a mechanism to attract different forms of partnership, be it from private developers, cooperatives, grassroot organizations, NGO's etc.

Controlled Growth

The project requires that no families be displaced from their habitat and an inside premises a substitute house project permits to relocate within the area those few families either in risk or in the project's way. The layout plan is adapted to the variety of sizes found in the houses to be replaced.

The creation of developed land for public buildings in the amount needed for the local population, not near, but on the location, where they are needed, is an adequate return for official investment, since that land would be unavailable without undergoing the comprehensive upgrade approach. Part of this land is cost because the families whose houses are demolished for opening up new roads will receive apartments of similar size to their previous house. But the project holds more than 50% of uncompromised units for the municipal government to assign, rent or sell according to general master Plan of the area or recovery rate goals as in a rotative fund.

Participation of the private sector

Cross financing must be included in project from the beginning. Providing urban land, ready to develop, can become a community asset to attract investors on community's terms. Maybe a tradeoff bargains for some costly part of the project, also a protection against inflation since land value will increase with advance of upgrade development.

Calling in investors or NGOs to initiate joint ventures, will reduce official financial requirements. If there is methodical motivation of private developers (either by community or local government) to produce much needed housing in or around these upgraded areas, their taxes (if reinvested) will boost economic growth of that county.

Our project includes space for convenient stores, multiple use hall, preschool facilities, and office space for community administration. The product must guarantee maintenance and management costs to form and sustain an independent organizational base to give continuity to the whole project, once the official goals are fulfilled if ever.

There are fine lots to be developed after the road is built to the high part of the hill. Real state developers are highly interested. if official sector open the possibilities to cooperate. This condition brings benefits for every sector since the private sector rates high cost efficiency compared to the official sector. As much as 3 to 1

Legalization of tenure

The land in our case is not private but owned by a central agency. The legal documents will be prepared according to the Integral Project. Those houses with front to public road network will receive an individual document. There is houses that share a common path for access must own the land collectively (as a condominium). The cadastre and legal work is being prepared by CAMEBA.

The legal property in itself is not a panacea but will in time be another factor of change, the first of which is access to the program of house improvement credits. That in itself is opening modern market instruments to a greater public and increasing their market options. Including 50% of the built environment in the real state market of the country would be a huge financial achievement for any country.

CONTEXTUAL RESPONSE AND AESTHETIC IMPACT

The rehabilitation project was made for a region of our mountainous suburbs characterized for its monotonous and uniform appearance. Seen from far has no difference from any other *barrio* of the city. Even thou, with the project proposal we tried to conserve a strong sense of cultural identity respecting their life style and trying to understand their customs.

Interconnection and hierarchy of Public Space

A strong sense of identity and a well marked hierarchy of spaces were important goals seek with this intervention.

Without demolishing important amounts of construction, but making specific interventions especially in the circulation area, meaningful spaces were conceived for social interaction and enjoy. Every spare space, doesn't matter how small, was integrated to the walk ways and transformed in a meeting place. All these interventions were proposed in a very conservative manner, using practically nothing, earth, plants some concrete floor and maybe a bench. The reason that promoted such designing decision is the typical behavior observed in these public programs in our country; once the project is ready and the construction begins, all that can be categorized as decorative and superfluous is eliminated. The result is always a notorious lack of quality spaces.

The public spaces were conceived as focal points that will enhance existing general uniformity but at the same time produce a physical pattern of place, a mental map linking the focal points, which is actually lacking. These focal points tend to be strong volumes towards the borders and voids towards the center of the built area in order to balance public space and use it for the proclaimed consolidation purposes.

In these settlements, the houses, that keep on growing horizontally and vertically without respecting the access ways, have taken all space and made the stairs incredibly narrow. This makes it difficult to know your location in the maze since someone inside can't look around more than a few meters away because everywhere elements block the views.

The new focal points are of two different kinds: voids and icons. The voids we try to locate attached to pathways in order to ease their length and add to the social activity along its way. The icons are public buildings educational, sports, community house recreation and religious and are used as a control belt both because we can only find empty land on the borders of the settlements, and because a mechanism of control over horizontal expansion is needed.

Finally a *graphic map image* will be designed to be posted on main access routes. We believe this element will contribute strongly to integration from within the community, providing a common identity for the whole extension, once divided into enemy blocks.

Neighbors of these huge settlements, often ignore the name of nearby stairs or path because they only use their own particular access path, sometimes because it is dangerous to access foreign sectors. The urban tissue is made up of isolated pockets

where social intercourse is limited to a few families, hindering access to outsiders, visitors or maintenance crews.

The social activities along the project phase have made public the different elements for the neighbors to approve; but a big part of the community needs daily reinforcement of the project. The fact that a project is like a fill-in puzzle, on which they have a responsibility to pursue, demand and keep track of.

Creating open space

As the *barrio* has formed a continuous tissue, it is important to structure it into an organic body. Creating a well connected open space network as visible and public as possible, which must be attached and not separated from pathways to protect it from gangs. All efforts aimed to incentive open views from houses to public places as a protection to the users, maintaining a minimal but heavy duty suite in public spaces and avoiding fences that block the public view. We are trying to open up space, not occupy it.

The gang problem is very real in barrios; they confiscate public spaces by force. Incomprehensible sights of empty parks are frequent, right besides overcrowded schools with no recreation place. Thus neighbors reject these public spaces because they believe they'll inevitably end up as meeting places for gangs. Community's actions are being coordinated to activate prevention measures.

Minimum physical intervention

The project must reflect respect for built environment. The architect's goal is to complement this natural urban tissue with the service infrastructure required to keep it safe and increase its habitability quality, to specially designed standards.

The effort to keep most of the existing tissue intact was achieved, only 2% of the existing structures are to be demolished and then again they are limited to those rated in poorer conditions. Only to achieve a maximum 8 flights span up or down to each house required widening of paths and some new vehicular roads. In the case of "El Enlace" it was traced so that it became a geological protection scheme and a storm water channeling device.

We hope this minimalist approach will ensure the preservation of the undeniable esthetic qualities of the settlement becoming formal: uniformity, contextual harmony and scale.

When a new road disrupts part of the tissue, there is compensation by increased mobility, security, and geological safety. Houses partially affected will receive support to replace or remodel facades according to new conditions. Families of Houses marked for demolition will receive an apartment of equivalent or superior area inside the location. The four level buildings are of similar height to some structures found nearby. But common facilities were added like parking places, daycare and recreation.

Urban Facade as main tool of aesthetic impact and support

Finally other contribution in the contextual response and aesthetic impact of the project is represented by the Urban Front. It is an innovative structure that has no inside, because it is sort of a portico which holds a series of public open places and squares at different levels through which access to many stairs is given. It becomes the main and visible face of the

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San Rafael-Unido sector. Its principal aesthetic goal is to bring order to a deteriorated border which include a match of contention walls, garbage collage, falling stairs and green slopes, all of them towards the main road that surrounds the sector. All this patterns were joined in a single structure with a strong rhythm of columns and a series of public services like bus station, market, phones and balconies with a vantage view over the city.

Besides the aesthetic aspect of this piece of the project, it could become the visible flag of the program for its location towards the main road of the sector through which all the community has to pass by. Plenty of previous interventions made up the hill happen unnoticed by the main part of the community because only the people who live around it notice. This construction was located in first order in the Work Plan to take advantage of the motivating feeling it would arise between the inhabitants because of its visibility and communitarian contribution.

