

# Architecture Education in Bolivia: Perspectives of Public and Private Programs

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## INTRODUCTION

The global, free market economy makes necessary the change of educational paradigms. The predominance of knowledge and technology, efficiency and effectiveness criteria, the expansion of diversity and interdependence, as well as the strengthening of the sense of community, gender and culture, all contribute to a new paradigmatic frame for the third millennium society. In this regard, architecture education must assume this new reality in order to accomplish effectively its task.<sup>1</sup>

The economic reform of 1985 modified the social structure of Bolivian society, shifting it from a state economy to a free market. Naturally, the old bureaucracy and institutions have difficulties in adapting themselves to the new model. Despite the fact today's architect confronts new rules and a different reality, the old professional and educational paradigms still remain.

In the following lines, a broad panorama of architecture education in Bolivia is presented, emphasizing managerial aspects related to academic efficiency and effectiveness, recognizing the characteristics of architecture programs at public and private universities. And finally, the probable consequences of the permanence of those characteristics and a draft of proposals are suggested.

## A Brief History

From the creation of the first architecture program in the Universidad Mayor de San Andrés (1936), the opening rhythm of new programs was quite moderate: Universidad Mayor de San Simón (1957), Universidad Técnica de Oruro (1976) and the Universidad Privada

BOLIVIA: SCHOOLS OF ARCHITECTURE  
CITY, CITY POPULATION, NUMBER OF SCHOOLS AND PRACTICING ARCHITECTS

CITY	POPULATION	SCHOOLS	PRAC. ARCHITECTS
La Paz	1,450,000	4	1,250
Santa Cruz	951,000	2	510
Cochabamba	510,000	3	609
Oruro	212,000	1	56
Sucre	158,000	2	54
Tarija	106,000	1	58
Trinidad	69,000	1	35

Source: Instituto Nacional de Estadísticas, 1997. Colegio de Arquitectos de Bolivia, 1996.

Fig. 2. Bolivia: Schools of Architecture/City, city population, number of schools, and practicing architects.

de Santa Cruz (1984). The first three are public institutions and the last private. All of them are located in the four major cities.

Due to the increasing demand, within the last six years the offer of architecture programs triplicated. By 1997, 11 universities offered 14 programs of architecture in 8 different cities. Small cities, with less than 60 practicing architects, have their own schools (see Fig. 2).

## GENERAL CHARACTERISTICS

Between public and private Bolivian universities do exist significant organizational differences, even though some similar aspects can be found. They all share similar curricula structure, demand a thesis work for graduation, and admission is basically free. On the other hand, there are radical differences in the graduation rate, in the way they perceive accreditation, and in the management of their budget.

## Organization

Public institutions enjoy total academic autonomy, though their budget is mostly provided by the National Treasury, as mandated by the Constitution. Academic authorities—e.g. rector and deans—are elected every three years by faculty and students in equal proportion.<sup>2</sup> These democratic ballots are heavily influenced by national political parties.

Private universities present organizational differences themselves. Some are foundations—e.g., UPSA and UPB, others are backed by a religious institution—e.g., UCB, and the rest of them are commercial organizations. The Constitution demands all private universities be controlled by the Secretary of Education.<sup>3</sup>

## Rigid Curricula

Both private and public programs are rigid, with all courses programmed in a mandatory basis. Broadly, Bolivian programs coincide with conventional, post-Bauhaus, western architecture curricula. Heavily concentrated in the architecture design studio, they include

BOLIVIA: SCHOOLS OF ARCHITECTURE  
FOUNDATION, INSTITUTION'S NAME, INITIALS, AND CITY

YEAR	INSTITUTION	INITIALS	CITY
<i>Traditional Programs</i>			
1936	U. de San Andrés	UMSA	La Paz
1957	U. de San Simón	UMSS	Cochabamba
1976	U. Técnica de Oruro	UTO	Oruro
1984	U. Privada de Santa Cruz	UPSA	Santa Cruz
<i>New Programs</i>			
1992	U. del Valle	UNIVALLE	Cochabamba
1994	U. del Valle	UNIVALLE	Sucre
1994	U. Ntra. Sra. de La Paz	UNSLP	La Paz
1994	U. del Valle	UNIVALLE	Trinidad
1994	U. San Bernardo	UPSBT	Tarija
1994	U. Franz Tamayo	UFT	La Paz
1995	U. Católica Boliviana	UCB	La Paz
1995	U. Católica Boliviana	UCB	Santa Cruz
1996	U. Privada Boliviana	UPB	Cochabamba
1996	U. San Francisco	USFXCH	Sucre

Source: The Association of Architecture Programs and Schools of Bolivia (AFCAB), 1997.

Fig. 1. Bolivia: Schools of Architecture/Foundation, institution's name, initials, and city.

courses of form composition, environmental design, materials and construction techniques, structures, history and theory, urban design and urban planning, topography, building codes and economics of architecture. A few programs—mostly at private universities—have recently included courses on the environment, general management, computer design applications and ethics.

### Thesis and Final Project

At all programs, students must write a thesis or develop a final project to earn the degree. The making of this work theoretically demands a year, but frequently it is two or more. It consists of a complete architecture design work, including extensive theoretical and technical issues.<sup>4</sup> The student exposes and defends his/her work facing a jury of architects, in a public act. The degree (*Licenciatura*) directly grants architecture practice. However, graduates must become members of the Colegio de Arquitectos, CAB, to practice legally.<sup>5</sup>

### Free Admission

In spite of having one of the lowest literacy rates of the Western Hemisphere, Bolivia has a university enrollment rate superior to that of much more populous countries. It is clear that it happens because of the free admission policy of Bolivian universities. The two oldest public architecture programs have a total enrollment of more than 2,000 students each. It is also important to mention that students at public schools pay “symbolic” tuition and fees.<sup>6</sup>

At private schools, enrollment is significantly smaller than that of public schools, obviously because of their tuition and fees, which range from US\$350 to US\$850 per semester (\$s 700-1,700 per year), an amount only a minority of the population can afford.

### Graduation Rates

The national university system graduation rates are extremely low. From more than 6,000 undergraduate architecture students in 1996, less than 200 obtained their degree.<sup>7</sup> In contrast, in the oldest private program—to date the only one that has awarded degrees—both graduation rates and academic defection indicators are many times more efficient than those presented at public schools.<sup>8</sup> These differences in academic performance can be explained by the dramatic economic and social extremes that characterize this country. In this sense, it seems that the poor quality of public primary and secondary education gets reflected in the public university system.

### Accreditation

Currently, the Secretary of Education is evaluating private universities by general standards, before starting the first accrediting process. The Government just failed to include public universities in the process. They feared that the government could eventually use the results of the process to cut down even more their budget, and fiercely opposed it through nationwide strikes. On the other hand, national educational authorities are still highly concerned about the ineffectiveness of the public university system, which they consider a true waste of resources for a poor country.

### Budget Management

Since 1985 the public budget for universities has been virtually frozen,<sup>9</sup> in spite of the fact that national enrollment in public universities has tripled in the last decade. This situation forced public schools to reduce dramatically their research and community work, while avoiding massive faculty dismissals. All this implies sharp cuts in library purchases and faculty training, and indefinite delays in computing, infrastructure and academic equipment updating. Reacting to what appears to be a fast sinking process, some architecture schools led their institutions by revising their structure, without significant results yet.<sup>10</sup>

On the other hand, and managed under criteria of efficiency and

not of politics, the oldest private schools not only have organized updated libraries, built proper infrastructure and acquired appropriate equipment; but they also have started faculty training programs, and initiated their first research and community work programs. Due to their management strengths, the original gap between public and private universities has been quickly closed, and in some cases, already reversed.

## ACADEMIC ADMINISTRATION

Academic administration of public and private schools differs substantially. Either side confronts curricula design and manage their programs from radically different perspectives. While public schools design their curricula with the explicit, revolution-minded hope of preparing an architect that will become an “active agent of social change,” private schools clearly state their aim to educate an architect “able to respond properly to the challenges of a competitive professional market.” On the other hand, while private program deans depend on the uncertainty of the market and results of marketing plans to develop their academic plans, public deans are mostly concerned about how effective was the political platform they built in the previous election, to put in practice their promises. What seems clear is that the academic administrations of either public or private programs give priority to curricular and non-curricular aspects related to their particular perspectives.

Whatever motivates administrative decisions, they affect four of the most critical aspects of academic effectiveness and efficiency, the clues to achieving long-term, sustainable academic quality: the definition of hiring, renewing and retention of faculty, the program total academic hours, the ratio students per faculty, and the inclusion of computer-aided design within the curricula.

### 1. Hiring, Renewing, and Retaining Faculty

During the '80s, the faculty body of public schools became what the media call “political plunder.” The curious public university democracy condemned faculty members to appoint themselves to any of the political groups within the school, in order to be saved from periodic purges, which go from reduction of courses to plain dismissal. Deans and heads, elected by partisans, are compelled to hand over “academic” claims such as test delay and replacement, or ignore faculty attendance. The result has been the development of a sort of vicious academia, which provoked the departure of many faculty.<sup>11</sup>

Some private schools have taken advantage of the situation, hiring some of the former public faculty, gaining the academic expertise their institutions were lacking. Others preferred to take the time to organize and develop their own academia, free from the old paradigms, and attached to their own missions.

Not everything goes well at private schools. At some universities in small cities, the administration is confronted with the lack of architects interested in becoming instructors. Economically unable to hire faculty members from other major cities or abroad, these schools are condemned to hire and retain inexperienced faculty during years.

### 2. Program Total Academic Hours

Public architecture schools in Bolivia probably manage the heaviest curricula in the world. Oldest public schools require their students to attend a total of more than 9,000 hours of class in five years.<sup>12</sup> Their design studios demand 16 to 20 hours per week. In clear contrast, private schools have designed curricula with 4,000 to 5,500 total hours, as is required by the Higher Education Code.

While the Government thinks that a substantial reduction of the hours programmed is necessary, public universities resist strongly. In fact, any reduction of the hours programmed to the curricula entails direct reduction of faculty hours, salaries and of a bit of the faculty itself. Once 50% of the administration is controlled by the faculty at any school, it is clear that such a decision will wait for a while.

### 3. Ratio Students Per Faculty

The freezing of their budget forced public schools to limit the hiring of new faculty, and as a consequence, the oldest public architecture programs have extremely high ratios of students per faculty. With less than a hundred faculty and more than 2,000 students, the situation seems to be highly demanding for instructors, as well as inevitably insufficient to students.<sup>13</sup>

On the other hand, private schools present more conventional ratios. However, their situation is not as good as it may appear, because some of them have not hired a single full-time instructor yet. In fact, most of the private schools' faculty is part-time, while in public schools it is exactly the opposite (see Fig. 3).

### 4. Computer design in the curricula

The application of computer-aided design at Bolivian schools of architecture is still in process. After being slowly introduced—without resistance—by students, only in 1995 the first academically-oriented computer design center was created at UPSA. Currently, only three private programs offer updated equipment and make them available to all students. Because of their budget constraints, the oldest public programs have not been able to renew their first machines, whose number and obsolescence limit their academic impact.

The limitation mentioned above contrasts seriously with current architecture practice. Among local officials and the Colegio de Arquitectos, where plans are presented before approval for construction, more than 80% of current architectural projects are processed by computer.<sup>14</sup> Also, 3-D presentations are increasingly being required by clients, while ink presentations are regarded as obsolete. If schools, either public or private, want to maintain a close relationship with the professional market, they will have to make an effort to fully implement computer-aided design within the curricula as soon as possible.

## CONSEQUENCES AND PROPOSALS

Public universities' low graduation rates, continuous strikes, overpopulated campuses, faculty absenteeism, and the series of arbitrary policies that pervades the academic atmosphere, have eroded public trust in these institutions. Increasingly, the top high-school graduates prefer private schools, going to public programs only when they cannot afford private tuition.<sup>15</sup> It is reasonable to believe that the constant decay in the critical intellectual mass, together with the other factors, will deepen the public program crisis.

In contrast, private programs will continue to take direct advantage from the crisis of their public colleagues. In spite of the

academic immaturity of most private schools, which today do not ensure a solid and consistent education, the enrollment of the best high-school graduates, a motivated faculty free from academic vices, and a more efficient administration, will permit their consolidation shortly, as it happened with the oldest private programs.<sup>16</sup>

That said, public programs seem to be forced to pursue radical changes. The first thing they have to confront is their own history. If they want to project themselves well into the next millennium as leading institutions, they have to surpass the paradigm of the old university attached to the romantic social revolution. Manacled within the limits of their own world of conflicting social classes and their "unconditional compromise" with the needed, administrators, faculty and students of public schools should begin to confront their weaknesses. Among other things, they should:

- Revise their authorities' election process, to free the academia from political interference.
- Revise their faculty admission, and retention criteria, making them academically oriented.
- Reduce their total academic hours, emphasizing professional practice hours and management courses.
- Implement and renovate computer equipment for 3-D design.
- Establish realistic tuition for students.

On the other hand, private programs should:

- Train their faculty.
- Establish research programs.
- Establish community extension programs.
- Develop tuition aid for low-income students.

Both public and private programs should:

- Establish a national architectural accrediting system.
- Implement and/or reinforce their admission criteria for students.
- Establish a system of criteria for faculty admission and retention.

Positively living the times of the global, open market, they can manage their own schools under the criteria of efficiency and effectiveness, overlapping intellectual merits to political membership, promoting diversity, and recognizing the power of knowledge and technology. In other words, they should leave academia to be just that.

## NOTES

<sup>1</sup> About this topic and its implications, see Ernest L. Boyer and Lee Mitgang, *Building Community: A New Future For Architecture Education And Practice* (Princeton: The Carnegie Foundation for the Advancement of Teaching, 1996).

<sup>2</sup> The result is named the "faculty-student government."

<sup>3</sup> Before opening a program, the curricula must be submitted to approval. Besides this, they enjoy relative academic autonomy.

<sup>4</sup> It is important to point out that most of students who finish their programs, never present a thesis. They are named *egresados*, a sort of "second class" professionals.

<sup>5</sup> The Law 1373 (November 13, 1992) defines the architecture practice limits and recognizes the CAB as the organization which allows architecture practice.

<sup>6</sup> Some public universities require an annual fee of only \$US 20.00. However, this small payment is fully dedicated to student associations.

<sup>7</sup> See CEUB, *Estadísticas Universitarias 1983-1991*. A dramatic example is that of San Simón. From an enrollment of 1,353, only 26 graduated in 1991.

<sup>8</sup> See UPSA, *Estadísticas de Graduación 1989-1996* (Santa Cruz: September 1997).

<sup>9</sup> Even though strikes became a routine, the annual public university budget has increased only a third.

<sup>10</sup> Back in September 1996, deans and heads of the three oldest public schools of architecture, met after seven years, and proposed a thorough revision of their structure. Their respective Academic Council, controlled by faculty and students have not approved their proposal. See the documents UMSA-UMSS, *Sectorial de Facultades de Arquitectura* (La Paz-Cochabamba: September 1996).

<sup>11</sup> See the well documented work of Rodrigo Villarreal A., *Crisis en la Universidad Boliviana* (La Paz: UDAPSO, March 1993).

BOLIVIA: SCHOOLS OF ARCHITECTURE  
INSTITUTION'S NAME, NUMBER OF STUDENTS, NUMBER OF FACULTY,  
FULL-TIME FACULTY, RATIO FACULTY/STUDENTS

INSTITUTION	STUDENTS	FACULTY	FULL-TIME	RATIO
<i>Public programs:</i>				
U. de San Andrés	2,600	87	52	1/29
U. de San Simón	2,219	89	56	1/25
U. Técnica de Oruro	523	29	16	1/18
U. San Francisco	-	-	-	-
<i>Private programs:</i>				
U. Privada de Santa Cruz	552	64	8	1/9
U. Católica Boliviana, Santa Cruz	210	26	2	1/8
U. Católica Boliviana, La Paz	265	36	2	1/7
U. San Bernardo	62	10	1	1/6
U. Ntra. Sra. de La Paz	85	18	1	1/5
U. del Valle, Cochabamba	110	35	2	1/4
U. del Valle, Sucre	38	9	0	1/4
U. del Valle, Trinidad	35	8	0	1/4
U. Privada Boliviana	24	6	5	1/4
U. Franz Tamayo	26	8	1	1/3
<b>TOTALES</b>	<b>6,749</b>	<b>425</b>	<b>146</b>	<b>1/16</b>

Source: The Association of Architecture Programs and Schools of Bolivia (AFCAB), 1997.

Fig. 3. Bolivia: Schools of Architecture/Institution's name, number of students, number of faculty, full-time faculty, and ratio faculty/students.

- <sup>12</sup> The architecture program of UMSS requires 9,688 hours. UMSA takes a bit less. The only comparable program in South America is that of the Universidad de Chile (also public), which requires 7,968 hours. Mexican programs requires about 3,500 hours and North American programs demands between 2,200 (4-year Baccalaureate) to 3,200 hours (4+2 programs).
- <sup>13</sup> This topic was fully developed in Victor H. Limpas Ortiz, *El Arquitecto en Bolivia: Mercado Laboral, Legislación, Educación y Actividad Gremial* (Santa Cruz: CAB-UPSA-CASC, May 1995).
- <sup>14</sup> Colegio de Arquitectos de Santa Cruz: *Estadísticas 1995-1996*. (Santa Cruz: 1997).
- <sup>15</sup> See UPSA, *Estadísticas Premio Bachiller Kupel 1984-1996*. (Santa Cruz: UPSA, 1997). Among the top 400 high schools graduates, less than 15% attend public universities.
- <sup>16</sup> The results of the last three national competitions among Bolivian architecture students seem to prove this.