

Full Length Research Paper

How construction trends of Universities sport facilities will be affected by financial crisis: A survey

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This paper aims to analyse how the financial crisis is going to affect the trends in the construction of sport facilities in the Spanish Universities. The method is a survey conducted with 180 people including three different groups: Students, architects and sport facility managers. The results show that a high percentage of the respondents agree the use, construction and renewal of sport facilities in Spanish Universities will continue increasing within the next three years. Regarding the architectural trends, the wellness and recreational centres will be more successful than other options such as climbing walls or centres integrating sports and arts. Perhaps, these trends are more affected by cultural and social factors than by the economy.

Key words: Finance, crisis, architecture, University, sport facilities.

INTRODUCTION

Construction trends of Universities sport facilities have changed a lot from its beginning. In 1859, when the first intercollegiate baseball game took place in the United States, between Amherst College and Williams College, these facilities on Universities started being an integral part of the campus landscape (Greenberg, 2004). After that, in 1869, the Rutgers campus in New Brunswick, New Jersey, hosted the first intercollegiate football game between Rutgers and Princeton universities (U. S. Census Bureau, 2010). But possibly the most famous fact related with Universities sport was the invention of basketball by Naismith in 1891 at the YMCA Training School (now Springfield College) in Springfield, Massachusetts (Cohn, 1991).

In the 20th century, the big investments in sport facilities came not only in general, but also in particular to the University sport (Monroy, 2008). The construction of the Intramural Sports Building on the campus of the University of Michigan in 1928 had a cost of \$743,000. It originally had 13 squash courts and 14 handball courts. The first trend in this kind of constructions could be

appreciated here, with such features as a moveable wall separating the swimming pool from the gymnastics area (Bogar, 2008). The objective was to have the possibility to congregate a thousand students daily and to mix their exercise with sociability (Stevenson et al., 1978). That dream would come true soon, not only in that campus but all over the world.

Immediately after the World War II, the construction of sport facilities continued increasing, but many of them soon started to be used more for recreation and intramural sports, as the social trends were directed more to that recreation, with little space being given to intercollegiate athletics (Bogar, 2008). Expert managers in recreation were hired to direct those facilities, creating a business model in which memberships were sold not only to people belonging to the University, but also to any person from outside (W. Canning, personal communication, March 4, 2008). That was the point when facilities for collegiate athletics emerged (Lamberth, 2010).

According to Bogar (2008), the most important trends in the last 50 years in collegiate recreational sport facilities are:

1. The renovation of older facilities;
2. Innovations;
3. Climbing walls;

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4. Rooftop facilities;
5. Integrating academics and sports;
6. Integrating health and wellness.

The renovation of older facilities suggests changes such as reducing the number of lockers to build different facilities, as it was done in the University of Michigan (W. Canning, personal communication, March 4, 2008); designing and creating a new atmosphere like in the Recreation Hall at Pennsylvania State University (Education Design Showcase Awards, 2007); or simply to demolish the old facilities basically devoted to team sports, to start over with a new one focused in a fitness centre and a bar, with much lower maintenance costs, like in the case of the University of Pennsylvania (Suttell, 2003).

Innovations include, and especially in recent years, the construction of juice bars and cafes within the University sport facilities. For example, a 1,700 ft² bistro and juice bar was incorporated in a \$54 million recreation center opened in 2006 on the campus of the University of Nevada at Las Vegas (UNLV), together with other recreational facilities like a spa, two swimming pools, and a 5,000 ft² fitness area (Illia, 2006). Similar cases appeared in Rider University, New Jersey, in which its Student Recreation Center opening in 2005 included a café, a lobby with seating and a flat-screen television wall and a fitness centre (Education Design Showcase, 2007); Fairmont State University in West Virginia, where the Student Activities Center opened in December 2004 at a cost of \$22 million comprised a dining hall with a market-style food court for 600 students, a conference center, a coffee shop, computer laboratories and classrooms (Architectural Showcase, 2007); or the University of Connecticut, in which the new sport facility was built with a juice bar, bowling alley, and an aquatic centre with a kayak wave pool and water slides (Goldman, 2007).

Climbing walls became quite popular in the last decade, and many Universities decided to incorporate them. For instance, the University of California, Santa Barbara (UCSB); the Alma College's Stone Recreation Centre in Michigan; Hamilton College, in New York; Oberlin College, in Ohio; RecPlex at the University of Dayton, etc. (Bogar, 2008).

Rooftop facilities are recreational facilities placed on top of structures. This is a way to maximize space and a very trendy option since 1981, when Brown University in Rhode Island built the first rooftop field on a college campus, consisting in a field hockey pitch (Bogar, 2008). Several years later, the University of California, Berkeley built on top of a parking an infill turf system, spectator areas, restrooms, equipment storage rooms, and a sidewalk plaza (Cohen, 2007). Other examples are Rhode Island's Providence College facility, including lacrosse and field hockey, and the University of Alberta renovation of a 20-year-old playing field placing 80% of the turf on the roof of a parking structure (Cohen, 2007),

or the wellness centre of Long Island University in New York, opened in 2008, that uses rooftop space to provide two tennis courts and a running track.

The trend of integrating academics and sport in single facilities has been both theoretical and pragmatic. At Haverford College in Pennsylvania, for example, President Thomas Tritton envisioned integrating athletics with the arts (Bogar, 2008). The facility built, apart from different spaces for many other sports, displays athletics-related paintings by students (Ezarik, 2006). The Ohio State University Recreation and Physical Activity Center, opened in 2007, that included swimming pools, racquet courts and a fitness area, was originally designed to look like several smaller structures so that it would fit the scale of the surrounding campus structures (Architectural Showcase, 2007).

Finally, there is an everyday clearer trend of integrating health and wellness in Universities facilities. One of the best examples is the Joseph E. Gallo Recreation and Wellness Center on the campus of the University of California, aiming to combine sport and health care, that serves as the physical "home" of wellness and offers a wide range of wellness activities, such as health counselling, nutrition programs, massage, excursions, etc. (Student Health Services, 2008). Also, Butler University, in Indiana, follows this trend in its Health and Recreation Complex, opened in 2006, where students can benefit from similar services like the already mentioned health counselling and others (Architectural Showcase, 2007). The wellness centre of Long Island University in New York, opened in 2008, includes rehabilitation areas for several diseases and a hydrotherapy pool (Architectural Showcase, 2007). Finally, Engelstad Arena in Grand Forks, on the University of North Dakota campus, includes a student Wellness Centre, a townhouse complex, retail shops, a restaurant, a bank, and a gas station (Widdel, 2004).

In the 21st century, a constant increase in the rate of sport facilities construction has been the dominant characteristic all over the developed world. The estimate of \$4.9 billion investment in the U.S. in the period 2004 to 2009 (Goldman, 2007) is a clear sign that this sector was in good shape. However, the financial crisis that has been isolating the world in the last two years might change not only the scenario of new constructions but also the sources of finance available for them (Rodríguez, 2009). Factor such as unemployment rate, real estate prices, public expenses or interest rates can affect directly to the demand of certain sports. Apparently, in a crisis situation, sports like football, basketball, handball or track and field should not suffer the crisis effect, while others such as skiing, yachting or golf could have a deeper impact on their demands (Monroy, 2009). University students do not have generally sources of high income, so as their rent diminishes, their interest for certain sports could also decrease. This situation could also have consequences in the construction sector

Table 1. Answers to questions 1, 2 and 3.

Question	Student		Architect (%)		Manager (%)	
	Yes	No	Yes	No	Yes	No
1	56.4	43.6	41.7	58.3	75%	25
2	58.2	41.8	41.7	58.3	45.4%	54.6
3	65.4	55.5	50	50	52.3%	47.7

regarding those companies focused in sport facilities.

In this paper, we will try to analyze the possible future trends in the construction of University sport facilities, starting from a survey conducted in several cities of Spain with students, architects and sport facilities managers.

MATERIALS AND METHODS

The method used in this paper was the survey with a questionnaire that was distributed in November and December 2010, after a pilot study that was done in October 2010. The questionnaire was developed by the authors during the month of September 2010, and the final version, after it was slightly modified, had only an initial part with the basic demographic information (age, sex etc.), three questions that could be answered as "yes" or "no", another question with several possible answers, and a final one to be answered on a Likert scale from 0 to 10. The questions were the following:

Question 1. Do you think that the use of sport facilities will increase within the next 3 years?

Question 2. Do you think that the construction rate of sport facilities will increase within the next 3 years?

Question 3. Do you think that the renewal rate of sport facilities will increase within the next 3 years?

Question 4. In case you had to choose a sport facility to be included at a new University opening in your city with no budget limitations, which one would you choose? (mark as many as desired):

1. Multipurpose facility
2. Climbing walls
3. Football field
4. Athletics track
5. Swimming pool
6. Recreation centre
7. Centre integrating sports and art
8. Wellness centre
9. Other

Question 5. How useful are nowadays for you the following actions at a University campus?

1. Renovation of the existing facilities;
2. Construction of bars and cafes in the facilities;
3. Installation of climbing walls;
4. Construction of rooftop facilities
5. Construction of facilities that integrate academics and sports, such as expositions, etc.;
6. Construction of facilities integrating health and wellness, like health counselling, massage and spa services.

The sample was 180 persons, and it included University students (110), architects (26) and sport facilities managers (44). The students had been users of the sport facilities of the University for

at least one year, while the facilities managers had been responsible for them also for at least one year.

They were guaranteed in writing confidentiality of their answers and their personal data. They were also informed about the object of the study and the fact that, when filling out the questionnaires, they voluntarily agreed to participate in the survey.

Facility managers and architects are normally extremely busy, and this kind of studies comes to them too often to get their attention. This is why the questionnaire presented was very simple and easy, so that they could fill it in no more than five minutes.

The questionnaire was sent by email to architects and facility managers and was distributed personally to students when they were reaching or leaving the sport facilities. All of them were based in Madrid, Spain.

RESULTS

A total of 180 people completed the questionnaires. Out of them, 26 were architects (mean age = 45.3, SD = 6.3), 44 were sport facility managers (mean age = 39.9, SD = 4.8) and 110 were students (mean age = 24.1, SD = 2.7). A total of 102 (56.7%) were male and 78 (43.3%) were female.

The answers to the questions 1 to 3 are shown in Table 1. There were no significant differences by gender or age.

To the fourth question, which facility would be chosen in case a new University was opening in the city with no budget limitations? The answers are given in Table 2.

Finally, question 5, "How useful are nowadays for you the following actions at a University campus?" got the following results, shown as mean of the answers in Table 3.

DISCUSSION

Apparently, and according to this survey, financial crisis will not affect that much to the use of sport facilities. More than 50% of the respondents thought that this use will increase within the next three years. It is significant that the managers of those facilities, possibly the persons who have better information about their use, show the highest rate, 75%. This might be interpreted as a sign that the view of the financial crisis is very different from the users who have to spend the money on those activities and from the persons running the business. However, regarding the construction rates, this group of managers is not so optimistic, which might mean that

Table 2. Answers to question 4.

	Student (%)	Architect (%)	Manager (%)
Multipurpose	73.6	92.3	79.5
Climbing walls	8.2	3.8	13.6
Football field	43.6	19.2	40.9
Athletics track	21.8	25	27.3
Swimming pool	34.5	42.3	59
Recreation centre	70.9	46.1	40.9
Centre integrating sports and art	16.4	38.4	27.3
Wellness centre	40.9	70.8	79.5
Other	34.5	19.2	43.2

Table 3. Answers to question 5.

	Student	Architect	Manager
Renovation of the existing facilities	7.8	7.3	8.3
Construction of bars and cafes in the facilities	5.2	6.7	7.1
Installation of climbing walls	2.1	1.4	2.4
Construction of rooftop facilities	4.5	5.6	4.5
Construction of facilities that integrate academics and sports such as expositions. etc.	3.6	5.9	6.1
Construction of facilities integrating health and wellness like health counselling, massage and spa services	6.8	6.9	7.4

they see the crisis affecting more to public expenditure than to the users' consumption. The results for question 3 also ratify this theory.

Regarding one of the purposes of this study, which is to discover which are the real trends in sport facilities construction in Universities in Spain, some of the trends mentioned by Bogar (2008) are confirmed, such as the renovation of the facilities (with high percentages in question 3 and high valuation in question 5) or the construction of wellness centres (with answers to question 5 moving between 6, 8 and 7.4, and more than 40% of the surveyed people choosing it for a new campus) and recreation centres. However, other trends suggested by that author do not get much attention from the three groups of students, architects and managers. In this case, for example, climbing walls is totally useless for them and the percentage of people interested in this would be on average, less than 10%.

In the middle, rooftop facilities is quite well valued bearing in mind that it is quite a new and unknown concept in Universities sport facilities.

Finally, the integration between sports and arts is better valued by people with a certain age (architects and managers) than by younger people (students). That might mean that it is necessary for some kind of new education for youth so that they see it as something useful and part of the sports scenario, instead of thinking of it like a

strange mixture. So, financial crisis will not have a deep impact in construction and renewal of sport facilities in Spanish Universities according to this survey. Perhaps, changes in demographics and cultural attitudes towards fitness affect more significantly the trends in sports facilities (Bogar, 2008) than economy. For example, the fact that on college campuses today, almost 60% of students are female (Marklein, 2005) might significantly impact recreational programming, facility design, and facility renovation. Weight rooms are substituted by fitness areas with an emphasis on cardio equipment, and that has nothing to do with economy but with culture. For the same reason, wide-open social areas are nowadays more common and better accepted than free weights spaces. This also might have a relation with students' expectation that technology has to be part of their sport experience on the college campus, so the use of internet, TV, etc. is absolutely necessary as it is for the rest of the population practising sports (Lamberth, 2010).

This study has of course one important limitation. The survey was conducted only in Spain, and it is clear that each country culture is very important in the trends of the construction sector. Also, in the same sense, the financial crisis affects in a different way to each country, even if they belong to the same economic area. So, further studies in other countries should be made to confirm these results.

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