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CONSEJERÍA DE TURISMO, COMERCIO Y DEPORTE

Secretaría General para el Deporte
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Departamento de Formación
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DOCUMENTACIÓN

NUEVAS TECNOLOGÍAS APLICADAS AL ENTRENAMIENTO DEPORTIVO

**Nuevo modelo de las aplicaciones de investigación en el CAR
de Sant Cugat – Centros de Investigación en China**

JOSEP ESCODA
CAR de Sant Cugat, Barcelona, España

Sierra Nevada (Granada)
16 y 17 de noviembre de 2007

NEW TECHNOLOGICAL APPLICATIONS IN THE HIGH PERFORMANCE SPORT TRAINING



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SHARED EXPERIENCES FROM BEIJING - CHINA


NEW APPROACH TO AN INTEGRATED IP SPORT FACILITY FROM CAR SANT CUGAT

Josep Escoda Saloni - IT Manager
CAR - Sant Cugat - Barcelona

Granada, November 2007


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IAHPSTC
International Association
High Performance Sports
Training Centers

International Forum
on Elite Sport



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北京体育大学
BEIJING SPORT UNIVERSITY

Founding Member (2007)

LOCATION



Address: North Avenue of Zhong Guan Cun (China)
City: Beijing
Main phone: 86-10-62989243
Phone: 86-10-62989244
Fax: 86-10-62989297
email: webmaster@bsu.edu.cn
Reservation email: yuxuefeng@bsu.edu.cn
Year of foundation: 1979

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体育科学研究中心
Sports Science Research Center



- 1.- Academic
- 2.- Research
- 3.- Evaluation
- 4.- Training

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体育科学楼总索引 Total Index of Sport Science Building

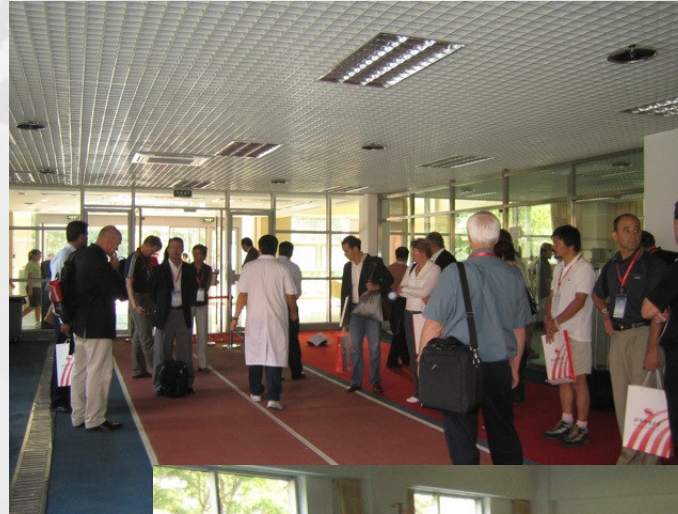
体育科学研究中心
Sports Science Research Center

1 F			2 F		
Janitor room	102 等速力量测试室	Isokinetic Test Lab.	201 测试大厅	Testing Hall	202 办公室
Metabolic Test Lab.	104 综合力量测试室	Strength Test Lab.	203 主任办公室	Director Office	204 副主任办公室
Office	106 消防总控室	Fire Control room	205 体成分测验室	Body Composition Lab.	
Network Control room	108 女更衣室	Female Changing room			
Male Changing room					
3 F			4 F		
Sport Human Science Exhibition Hall	302 运动解剖学实验室2	Sports Anatomy lab. No.2	401 多功能厅	Multifunction Hall	402 高氧恢复室
实验室3	304 体能恢复实验室3	Biology lab. No.3	403 理疗室	Physiotherapy room	404 低氧测试室
室4	306 运动心理实验室	Sport Psychology lab.	405 低氧训练室	Hypoxic Training lab.	406 机械室
Dept of Sport Psychology No.1	308 冰箱室	Refrigeratory room	407 储藏室	Storage room	408 信息处理室
室	310 心理教研室2	Dept of Sport Psychology No.2			Information Program lab.
Psychological Counseling Center					

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Metabolic lab

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Isokinetic Lab.



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Strength Lab.



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Sports Science Research Center

Fitness Evaluation Lab.



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体育科学研究中心
Sports Science Research Center

Fitness Evaluation Lab.



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体育科学研究中心
Sports Science Research Center

Sport Anatomy Lab.



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体育科学研究中心
Sports Science Research Center

Rehab & Phisiotherapy



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体育科学研究中心
Sports Science Research Center

Hipoxia & Hiperoxia Lab.



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体育科学研究中心
Sports Science Research Center

Hipoxia & Hiperoxia Lab.



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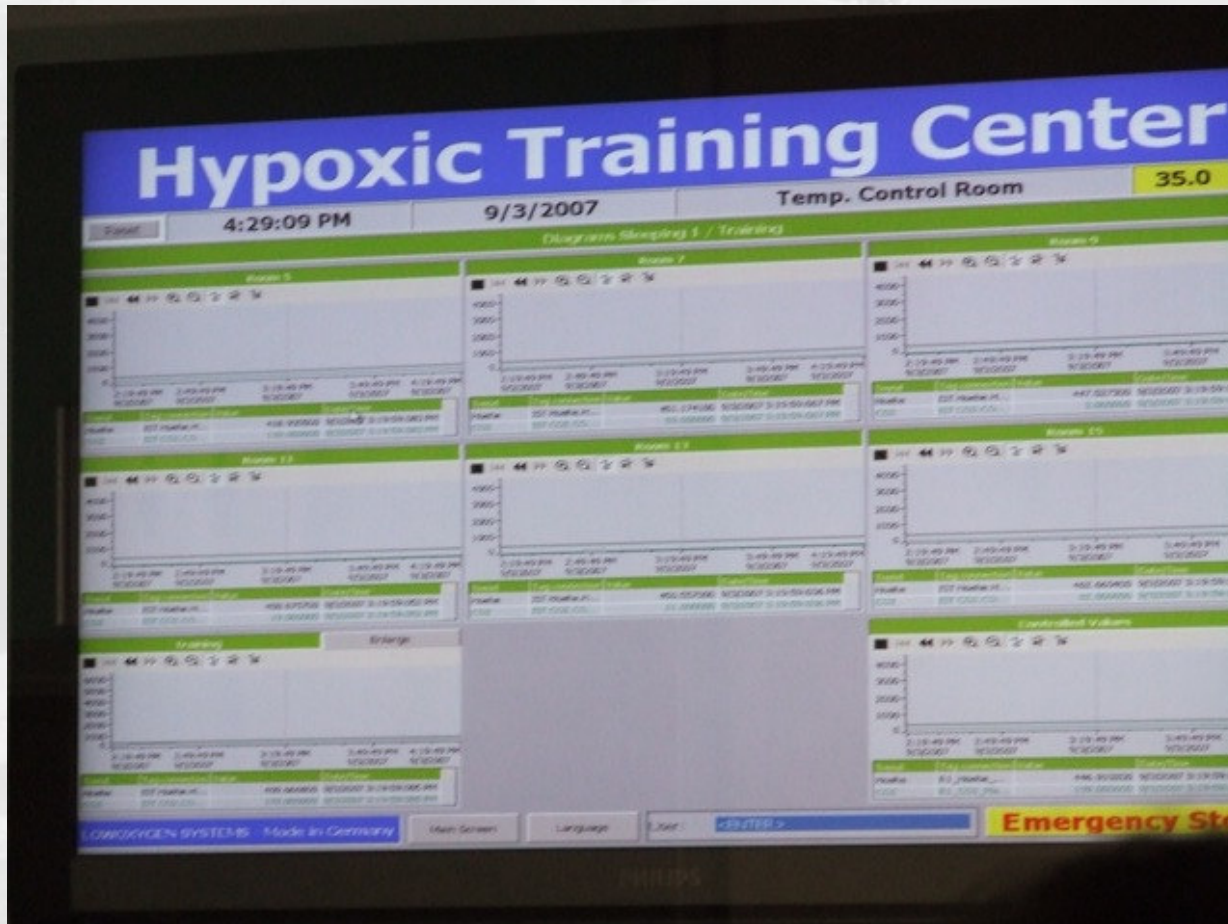


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体育科学研究中心
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Hipoxia & Hiperoxia Lab.



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Member (2007)

LOCATION

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City: Beijing - China

Main phone: +86 13911931168

Phone: +86 10 871 83204

Fax: +86 10 671 12629

email: sunxiaopingo713@sina.com

Reservation email:

Year of foundation: 1951

Institutional dependency: Public

Name of the director: Yan Shiduo

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CAR

Centre
d'Alt Rendiment
Esportiu

EXPERIENCES IN BEIJING - CHINA NATIONAL SPORT TRAINING CENTER



Highest
Medal
Production
Center
Worldwide
40/63 - 2004

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Badminton



Volleyball

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Table Tennis



Strength
Conditioning



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Weightlifting



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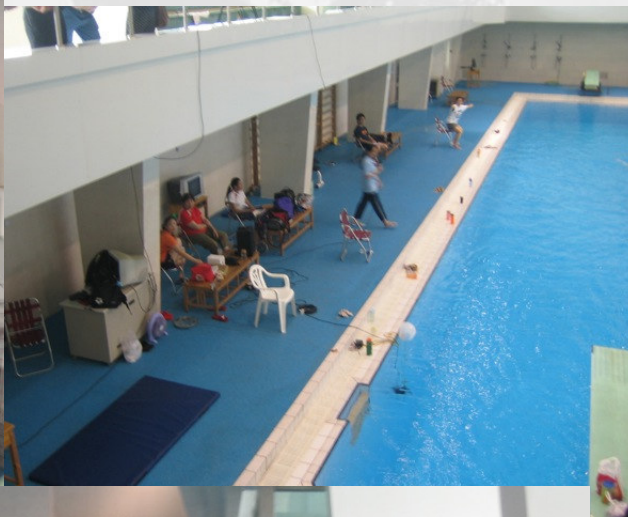


Basketball



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Sincronized
Swimming

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Gymnastics

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Gymnastics



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Gymnastics



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Swimming



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Golf



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Golf



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Vision Center & Health Care



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Multi-Sport Venue - High Performance Training Center of Catalonia (CAR) Sant Cugat

Approaching Science and Technology to the training site



Objective of the Multi-Sport Venue

-To offer coaches and sport technicians a state-of-the-art venue with world reference functionalities and useful technology.

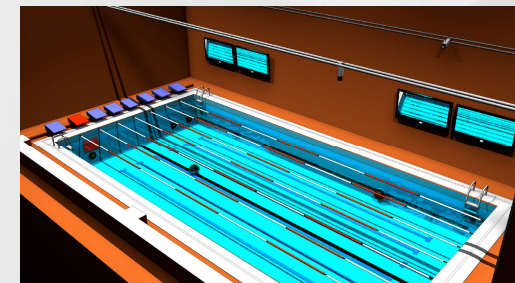
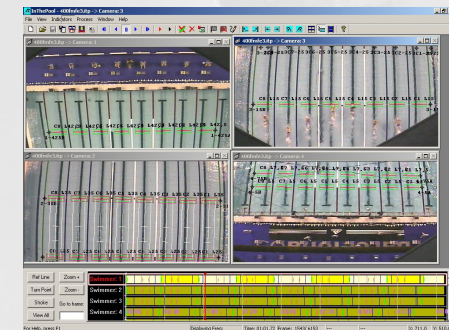


Enterprise
Energy
Manager

To become the 1st Integrated IP Sport Facility

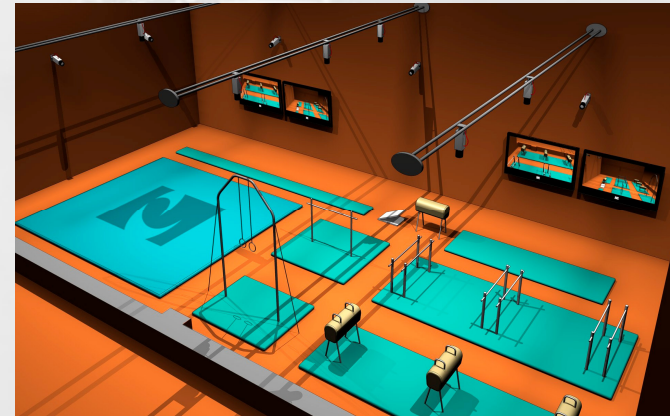
Water Sports: Swimming, Water-Polo, Synchronized Swimming and Diving

- . visualization
 - sub-aquatic cameras
 - rail cameras (sub and supra)
 - supra-sub camera on rail
 - monitors (Led video-walls)
- . start
 - high speed cameras
- . time control
 - competition pads
- . feedback
 - sub-aquatic panels, stroke counter
- . cinematic
 - vertical cameras
- . start/turn forces
 - force platforms,
 - accelerometers, strain gauges
- . reaction time
 - starters
- . v. intra-cycle
 - speedometers
- . scouting
 - IP Robotic cameras
- . scoreboard
 - countdown, results and statistics
- . audio
 - IP Speakers supra and sub /
 - on-line editing & playback



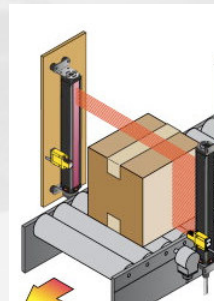
Men and Women Artistic Gymnastics

- . visualization **IP Robotic cameras**
monitors
- . audio **IP Speakers and audio editing**
- . force **apparatus instrumentation**
force platform & surface
sensors
- . vaulting speed **photocells & array banners**
- . cine. + din. **photogrametric analysis**



Trampoline

- . visualization **cameras**
monitor
- . audio **IP Speakers and**
Audio editing
- . synchro. comp. **photocells**



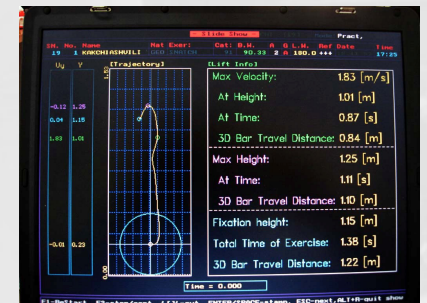
Taekwondo, Wrestling, Judo

- . visualization **IP Robotic cameras**
- . audio **LED monitors, projector**
- . taekwondo **IP Speakers and editing audio**
- . com. simulation **electronic pads (FIT)**
- . antrop. control **chronometer and scoreboard**
- . antrop. control **weight and height measurement**



Weightlifting

- . visualization **IP Robotic cameras**
- . visualization **LED monitors**
- . forces **platforms (1 big size)**
- . audio **IP speakers and editing audio**
- . antrop. control **weight measurement**
- . weight disp. **position / displacement sensors**
- . weight disp. **accelerometer**



High Jump, Table Tennis

- . visualization IP Robotic cameras
LED monitors
- . audio IP Speakers and editing audio
- . force force platforms big size
- . specific testing force platform / legs machine trainer
- . cine. + din. automatic protogrametric analysis
(high speed)
- . simulator ball spin simulator
- . glues control ITTF banned VOCs as of 2008



Shooting

- . visualization telemetric IP Robotic cameras & monitors
- . pressure distr. instrumented platforms (1 hard i 1 soft)
- Tekscan
- . com. simulation electronic scoreboard
- . targets electronic targets + target monitors
- . arms adjust adjustment of armament (potro)
- . shot training Scatt - precision
- . lighting ambience creation
- . audio IP speakers and audio editing



Multi-Sports Room

- . visualization
- . audio
- . scouting
- . comp. simul.
- . cin. + din.

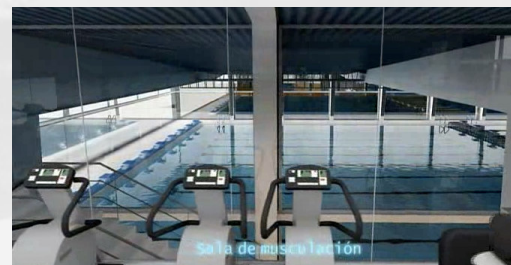
IP Robotic cameras on rails
 LED monitors
 IP Speakers and editing audio
 Auto Tracking via radio
 multi-sports scoreboard
 high speed photogrametry analysis



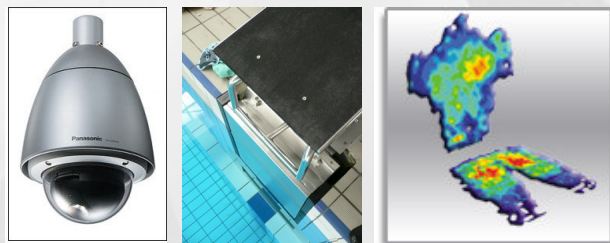
Weights Room

- . visualization
- . audio
- . series / repts.
- . qualitative work

IP Robotic cameras
 LED monitors
 IP speakers and editing audio
 quantitative control system
 speed control and power execution



Innovation - concept of the project



register

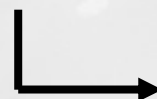


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Instant local review !



High output delivery



analysis through the net, anywhere !

. Key points

- flexibility, free mobility, friendly gathering
- capacity, accessibility
- innovation
- instruction of coaches and sport technicians
- integration (all IP with independency of domotics)
- international collaboration (share the experience worldwide)

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