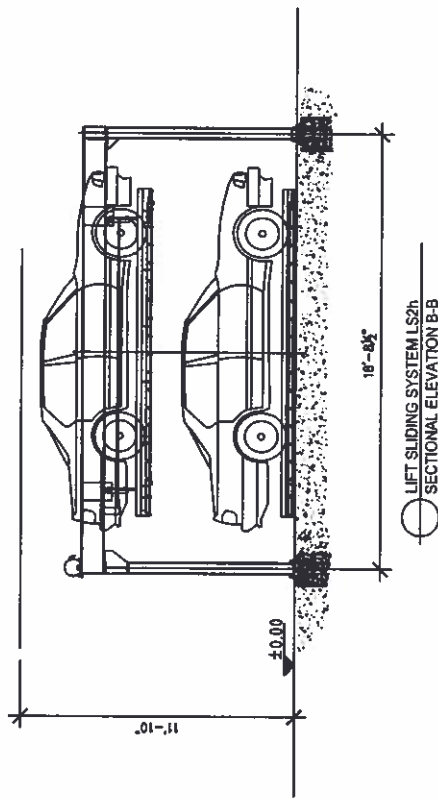


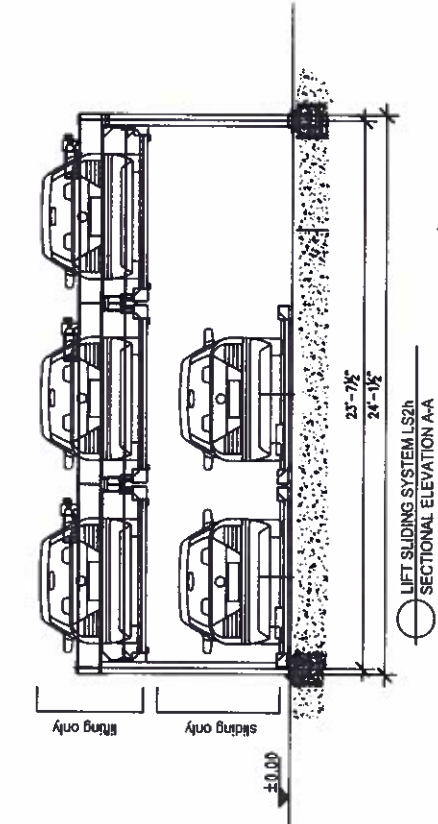
MODEL **LS\_h\_d**

Max 5 h (high) & 3 d (down)

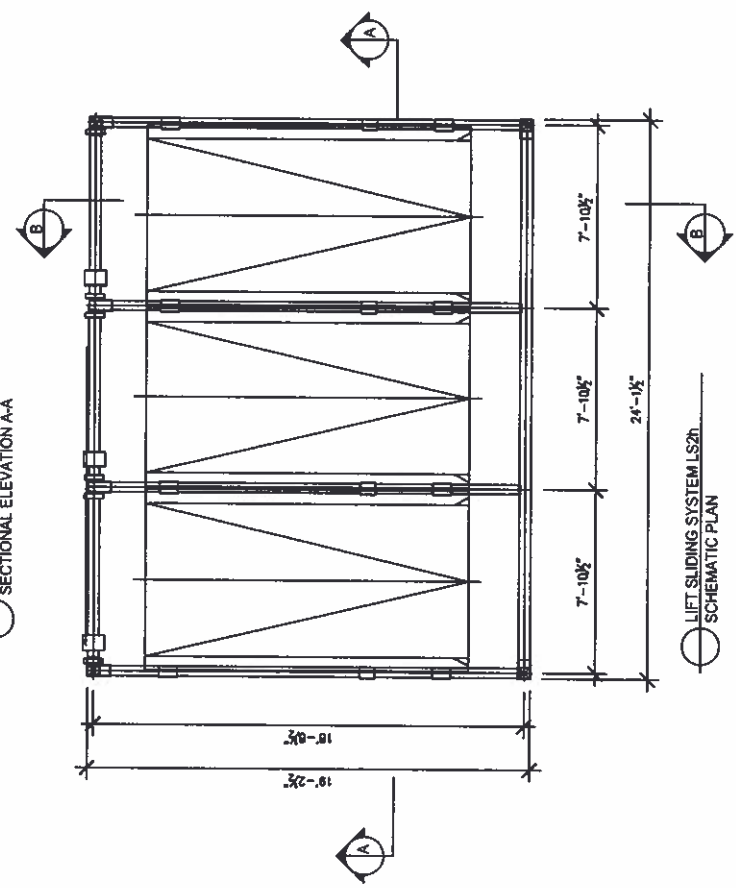
|   |   |
|---|---|
| DESCRIPTION                                     | Semi Automated Lift-Sliding System                    |
| STALL LENGTH, ft-in (m)                         | 19'-8" (6)  |
| STALL WIDTH, ft-in (m)                          | 8'-3" (2.5)   |
| CLEARANCE REQUIREMENT/STALL (Height), ft-in (m) | 6'-4" to 8'-1"  |
| LIFTING CAPACITY PER PLATFORM, lbs (kg)         | 5200 (2359)   |
| WEIGHT OF UNIT, lbs (kg)                        | (determined by model)                                 |
| ELECTRICAL REQUIREMENTS                         | 3-phase 208-480V/single phase 110-220V                |
| OPERATION                                       | Automatic with manual override for emergency lowering |
| ADDITIONAL REQUIREMENTS                         | PLC (Programmable Logic Control)                      |
| APPROVALS                                       | MEA certified for City of New York                    |



LIFT SLIDING SYSTEM LS2h  
SECTIONAL ELEVATION B-B



LIFT SLIDING SYSTEM LS2h  
SECTIONAL ELEVATION A-A



LIFT SLIDING SYSTEM LS2h  
SCHEMATIC PLAN

**PARK PLUS Inc.™**

PARKING SYSTEMS

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DATE:  
DRAWN BY:  
CHECKED BY:

PROJECT DRAWING

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PROJECT LIFT SLIDING PARKING SYSTEM  
TECHNICAL SPECIFICATION  
SEMI-AUTOMATED PARKING SYSTEM

DRAWING DESCRIPTION

MODEL LS2h

REVISIONS:  
DRAWING NOT TO SCALE

## **Functional Specification**

### **LS Parking System**

#### **1. Description**

The parking system consists of basic steel structure with optional roof and side cladding and parking platforms on which individual cars are parked. The system is operated by the parker by parking his car on a platform and after leaving the car and initiating the parking sequence the car is parked within the structure of the building.

#### **2. Components**

##### **2.1 Structure**

The structure of the parking system is a steel structure designed to form a number of parking cubicles (locations) into which cars are positioned when parked. The structure consists of steel beams and other formed sections, plates and cladding if required. A roof can be provided.

##### **2.2 Upper Floor Transfer Trolley**

The transfer trolley on any of the upper floors allows for the transfer of a car from one position to a position next door as well as for the lifting of a car from ground floor. It is manufactured from steel sections and runs on wheels and rails. It is also incorporating the lift and the lifting platform.

##### **2.3 Ground Floor Transfer Trolley**

The transfer trolley on ground floor allows a transfer of a single car from one position to the position next door. It is manufactured from steel sections and runs on wheels and rails.

##### **2.4 Lifting Platform**

The lifting platform is suspended from the upper floor transfer trolley by cables. The platform has cables attached to each corner and is lifted up by a lift mechanism incorporated in the transfer trolley.

##### **2.5 Electronic equipment**

Electronic equipment is a programmable logic control (PLC) unit which controls all functions of the parking operation.

### **3. Description of Parking / Retrieval**

When the parker arrives at the parking facility he has two options:

#### **a. Parking on the ground floor**

Parking on ground floor requires the car to be positioned on any empty ground floor parking trolley. The parking position is determined by chocks on the platform which limit the travel of the car on the platform to a correct position. There is no specific need for the parker to initiate any parking sequence except to swipe his card to start any commercial transaction.

#### **b. Parking on an upper level**

Parking on the upper levels requires the parker to initiate a parking sequence which will allow him/her to park his cars at any level except ground floor. When arriving and with all the ground floor parking spots filled the parker requests a parking platform to be lowered by either swiping his SIM card or entering his PIN via a key pad. The parking control system will determine which platform is closest and lower this platform to the ground level. The parker will then drive his car onto the platform and leave the car. There is no need to remove the platform from ground floor until such time as another parker arrives or a car is requested to be retrieved.

#### **c. Retrieval**

Car retrieval works in a reverse order to the parking operation. If the car is parked on the ground floor it can be driven off the platform at any time.

If the car is parked in an upper level the parker is required to swipe his card or enter his PIN. The PLC then locates the car and prepares the platform to be lowered. In order to carry out this function some of the platforms beneath the car to be retrieved need to be moved out of the way by the transfer trolleys in order to open the spaces below through which the car can then be lowered.

### **4. Electrical Control and Safety Devices**

#### **4.1 Electrical System**

The electrical system consists of a power and a control circuits all operated by a PLC. The mechanisms are operated by D-O-L switching contactors. Electric

three phase motors are driving via gearboxes the wheels and the lifting devices.

#### **4.2 Safety Devices**

The parking system is protected by limit switches as well as motion detectors. The limit switches limit each motion to stop at the correct level and position within the system and the motion detectors stop all motions in a case of an emergency or in case of a person moving within the system. The system cannot start up automatically and an operator needs to reset the machine after checking that the start-up is safe and any persons/obstructions have been removed.

Functional specifications for the system are available on request from the manufacturers.

Serial number: WWZ2009/0208

Shenzhen Environmental Inspection Center

# Inspection Report

Item: Noise Monitoring of Industrial Corporation

Commission by: Shenzhen Yeefung Automation Technology Ltd.

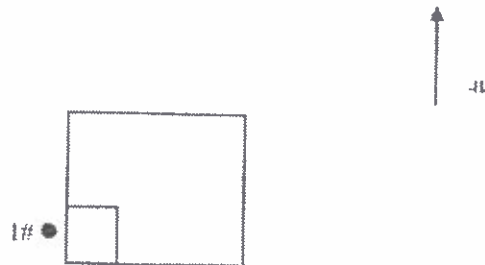
Inspection unit: Bank of China, Shenzhen Branch

Date: July 1<sup>st</sup>, 2009

Shenzhen Environmental Inspection Center

|                                 |  |               |                                |                  |
|---------------------------------|--|---------------|--------------------------------|------------------|
| Commission by                   | Shenzhen Yeefung   |               | Contact person                 | Lin Chunquan     |
| Address                         | Long cheng North Road, Longgang District                 |               | Phone                          | 84879783         |
| Inspect unit                    | Bank of China, Shenzhen Branch                           |               | Contact person                 | Zeng Likui       |
| Address                         | Zhongyi Building, Jiabin Road, Luohu District            |               | Phone                          | 13713749779      |
| Inspect purpose                 | Inspection of Noise                                      |               |                                |                  |
| Inspect person                  | Li Tao, Chen Weixiong                                    | Inspect time  | 2009-06-24 15:00               |                  |
| Machine type and serial number: | Denmark B&K Cor. 223RE(2562765)                          |               | Inspect car                    | From our station |
| Noise source                    | Mechaninc  |               |                                |                  |
| Method                          | GB 12348-2008 Noise emission standard of Industrial Cor. |               |                                |                  |
| Weather condition:              | Sunny  | Wind: 0.2 m/s | Acoustics environment: Traffic |                  |
|                                 |  |               |                                |                  |

Schema of Inspection point:



| No.           | Point Name                | Leq Value dB(A) | Noise value after deduct background dB (A) |  |
|---------------|---------------------------|-----------------|--|--|
| 1             | 1 meter from infrared ray | 59.8            | /  |  |
| (Below blank) |                           |                 |  |  |

Inspect by: Li Tao

Verify: Zhang Junling

Issur (position) : Dai Ni (Director)

**GALEN CAROL**  
AUDIO

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**HOW-TO'S**

**Decibel (Loudness) Comparison Chart**

Here are some interesting numbers, collected from a variety of sources, that help one to understand volume levels of various sources and how they can affect our hearing.

| Environmental Noise   |                  |
|---|------------------|
| Weakest sound heard   | 0dB              |
| Whisper Quiet Library   | 30dB             |
| Normal conversation (3-5')  | 60-70dB          |
| Telephone dial tone   | 80dB             |
| City Traffic (inside car)   | 85dB             |
| Train whistle at 500', Truck Traffic  | 90dB             |
| Subway train at 200'  | 95dB             |
| <i>Level at which sustained exposure may result in hearing loss</i>   | <i>90 - 95dB</i> |
| Power mower at 3'   | 107dB            |
| Snowmobile, Motorcycle  | 100dB            |
| Power saw at 3'   | 110dB            |
| Sandblasting, Loud Rock Concert   | 115dB            |
| <i>Pain begins</i>  | <i>125dB</i>     |
| Pneumatic riveter at 4'   | 125dB            |
| <i>Even short term exposure can cause permanent damage - Loudest recommended exposure WITH hearing protection</i> | <i>140dB</i>     |
| Jet engine at 100', Gun Blast   | 140dB            |
| Death of hearing tissue   | 180dB            |
| Loudest sound possible  | 194dB            |

| OSHA Daily Permissible Noise Level Exposure |             |
|---|-------------|
| Hours per day                               | Sound level |
| 8   | 90dB        |
| 6   | 92dB        |
| 4   | 95dB        |





*Leaders in high density vehicle storage systems*

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Email: [info@parkplusinc.com](mailto:info@parkplusinc.com)

## LIFT SLIDING SEMI-AUTOMATIC PARKING SYSTEM



The Lift Sliding Semi Automated Parking System by Park Plus, Inc. is a self-parking high-density vehicle storage & retrieval system that maneuvers stacked vehicles on platforms in horizontal and vertical motions in order to present vehicles at grade position through the use of a Programmable Logic Control (PLC). This process allows efficient direct access to vehicles without the need to remove vehicles in the stacks in order to retrieve a specific vehicle [no attendant required]. The system can be designed with a pit depth for up to 3 vehicles below grade and up to 5 vehicles above grade, giving a total vertical stacking capacity of 8 vehicles in the space usually occupied by a single vehicle. There are no horizontal limitations to the system. This system can be customized for indoor and outdoor applications, complete with external façade cladding/siding, garage doors and roof, per client specifications.

- Self-parking (no attendant required)
- Cost effective multi-layered parking solution
- Low maintenance
- No hydraulics
- Retrofitted into existing buildings
- Enclosed to client requirements
- Floor Area Ratio (FAR) beneficial
- Full safety features
- MEA approved for NYC
- ISO Compliant

**MODELS: VARIATIONS OF THE FOLLOWING ABOVE GRADE (\_high) and BELOW GRADE (\_down)**

|         |                 |
|---------|-----------------|
| LS 2h   | : 2 high        |
| LS 2h1d | : 2 high 1 down |
| LS 3h   | : 3 high        |
| LS 3h1d | : 3 high 1 down |
| LS 3h2d | : 3 high 2 down |
| LS 4h   | : 4 high        |
| LS 4h1d | : 4 high 1 down |
| LS 4h2d | : 4 high 2 down |
| LS 4h3d | : 4 high 3 down |
| LS 5h   | : 5 high        |
| LS 5h1d | : 5 high 1 down |
| LS 5h2d | : 5 high 2 down |
| LS 5h3d | : 5 high 3 down |

Structurally, the LS system must be a stand-alone system with no interference with the building's structural grid. Building columns can be placed strategically outside of the LS envelope according to the LS System grid in order to align clear movement and access, but no building columns can be accommodated within the system due to mechanical procedures. Many of our designs have accommodated in-door applications for the system that interact with structural grids.

#### **SAFETY FEATURES**

- Complete laser detection for obstructions and movement
- Visual and Audible alarms
- Positive locking mechanisms
- Anti-fall devices
- 4 high-tensile cables per vehicle platform

#### **OPERATION**

The operation of the Lift Sliding System is via a push-button control unit and access swipe card located on or near the point of vehicle entry. Remote control devices are optional. For in-ground units, a safety gate is required.

#### **SERVICE AND SUPPORT**

Park Plus, Inc. provides 24/7 technical service and support. The Service Department is located in Wallington NJ with convenient access to the Tri-State area. Established in 1969, Park Plus is recognized as the industry leader in high-density vehicle storage systems.