

Everything we've learned about building garages

Parking Firms:

- Get recent customer references
 - Were they responsive to your needs
 - Did they do functional layout or the engineering (or both)?
 - Was the design a good one for traffic flow?
- We prefer that the parking consultant provide both functional and structural design rather than having a non-parking person do the structural (which seems to be the typical way Univ. architect offices work).
 - We now select the Architect for design, then have a representative of that firm help us interview and select the parking consultant. They have a stake in who they work with, and so do you.

Type of construction:

- PreCast
 - Goes up faster than cast in place
 - Less expensive to build
 - More expensive to maintain (need to replace expansion joints every 5-10 years)
 - Deep beams make nice roosting locations for pigeons
 - Harder to light
- Cast in place
 - Costs a bit more up front, but less long-term maintenance
 - Takes a bit longer to build (we've found about 1 year to construct a 1,000 space garage)
 - Ability for garage to be more open – longer distance between columns
 - Use additives in your concrete to repel corrosion
- For either:
 - Recommend a water proofing membrane be applied before opening garage (helps reduce chlorides and makes concrete last longer, but it's very expensive so include it in the bonded project!) Since the bid process usually comes down to lowest price – make sure your specification is VERY TIGHT. We rely heavily on those with the best warranties and reputation in the industry.
 - Standardize your light fixtures in every garage (the Architect's office may want variety – but you do not!)
 - Blue light phones are a value-add at pedestrian exits. (Gaitronics is the only unit we know of equipped to handle duplexing -where the officer can talk to the customer at the same time the customer can talk with them – unlike the communications systems used by others which operate like a radio where one has to stop talking before the other can talk).
 - Trash cans beget more trash inside the garage. Don't put them in if you can avoid it other than at the pedestrian entrance/exits.
 - Signs – you need them big, bright, and standardized.
 - Work with the elevator vendor to design a control panel that coordinates with your floor signage in the garage. This helps customers get the right floors without guessing.

- We prefer the same floor to floor height all through the garage – having a higher floor on the bottom for high top vans but lower as you move up is a problem when customers do not pay attention to the crash bar.
- Require them to install locking doors on any nooks/crannys you can get for storage. It will come in handy down the road (you may even be able to rent it out to other departments!). Doesn't need HVAC, just lights and a lock on the door.
- Pick out your preferred booth and make them use it (they can design around it).

Things to watch out for as you build:

Retail

If you put retail into the garage:

- Locate the retail for food service near the dock, or you have drips from their door to the dock as they move the garbage.
- Ensure they meter all utilities so you can charge back (typical Univ. buildings do not do this)
- Ensure the retail space has some flexibility in case the chosen entity goes out of business – can you subdivide the space?
- Vents and air flow – Ensure it is adequate for all possibilities (i.e.- we have pop coolers in a small back room in one retail store and insufficient vents to cool the space off – hard to work around!)
- If more than one retail store is built, ensure all have separate HVAC controls for their space.

General Garage

- Floor drains – are they big enough? In the right place to catch all water?
- Exit lanes – if a mixed use garage (hourly and permits) – ensure adequate room for permits to exit with a back up of hourly customers.
- Lighting – split circuits on each floor so you can turn off half (or 1/3 or 2/3) of your lighting and still have some lights burning (we had a call to reduce electricity during an energy shortage, and found some of our garages were all or nothing!)
- Put lights on an “eye”, not a timer. Easier to respond to hours of darkness due to time changes (i.e. you don't have to go around resetting all of your timers when it starts to get dark early.)
- Make sure the turn radius on an exit lane is sufficient for poor drivers with big cars
- Motorcycle parking – if you can, create a separate entrance/exit lane and install some motorcycle parking on a level surface within the garage. Good PR, and this way avoids them using your gates, which is dangerous.
- Don't allow the Architect to design painted handrails. We prefer stainless steel, aluminum, or at least galvanized steel.
- Keep up-to-date on change orders. This will help you track your contingency better and to follow up on Errors & Omissions.
- Personally walk with the CM or contractor and inspect floor slabs as they are poured. Check for consistent smoothness and broom finish. You must have decent slabs in order for traffic coating to seal. If you don't know what to look for (we didn't) – just ask the CM or architect. They will be happy to show you.

- Have the signage installer install the planned signage on one complete level for you to review before he/she completes the rest of the garage. This will better enable you to see if you are going to have adequate, visible signage and allows you the opportunity to add more signs to the same contract, if necessary.
- Schedule regular night audits of lighting. You don't want to find out from your customers that half the lights are burned out.
- Do not put ash containers in unless you have to. People put trash in them so they aren't usable for their intended purpose without starting a fire. We actually have more butts on the floor in the facility which has ash containers than we do in the one which doesn't. In both about three-fourths of the users are students so a different population doesn't account for this difference.
- If your garage is going to be more than five levels above the ground, you may need to consider increasing the height of the railing on the top level to help discourage potential jumpers.

Elevators

- Only use glass backed elevators if the elevator is on the exterior of the building. If it is on an interior, fire code requires glass block walls, reducing the visibility into the elevator. If a glass backed elevator is used and there is an exterior enclosure, make sure there is a way to clean between the outside of the elevator and the inside of the elevator enclosure.
- If the elevators are open to the weather, rain will likely blow into the elevator door and run down inside the elevator shaft, possibly damaging the electronics in the elevator. Some type of shield is needed to block the rain.

Thanks to Sarah Blouch from The Ohio State University, Theta Dempsey from the University of Oklahoma, Jim Joy from the University of Missouri, Gary Smith from the University of Arkansas, and Casey Wagner from Walker Parking Consultants for their input to this document.

Please submit any additional information to be added to this list to Gary Smith at garys@uark.edu.