



October 25, 2013

The Honorable Anthony Hood, Chairman
Zoning Commission of the District of Columbia
441 Fourth Street, NW – Suite 220
Washington, DC 20004

Re: Zoning Regulation Review and Opportunity to Harmonize Its Overall Goals and Objectives with Recent Technology and Systems to Automate Parking (ZC Case No. 08-06A, Subtitles B and C) – Comments, Recommendations, and Request to Testify when Those Subtitles Are Scheduled.

Dear Chairman Hood and Members of the Commission:

This letter, supplemented by personal appearance at upcoming public hearings, comments on one aspect of the overall zoning regulation review now underway. We ask that the Commission adopt the provisions already proposed in the hearing Notice, with minor modifications, which will provide property owners and developers a “by right” option to provide garage parking either by automated systems or conventional solutions.

Automated parking systems vary but all move vehicles on platforms or dollies to and from their storage location without traditional ramps or aisles instead of the vehicle being driven to and from the parking spaces. Automated systems are much more efficient in terms of both area and volume. Automated systems result in a reduction of the volume needed to accommodate the programmed number of parking spaces by approximately 40% to 50% as compared with conventional garages.

Additional benefits of automated garage systems, as compared with conventional garage systems, include reduced environmental air quality impacts since vehicle engines are off and, since the vehicles are not being driven to and from parking spaces, overall energy use is also reduced as there is no need for ventilation fans, heating, air conditioning and lighting in parking areas of the garage. In addition, patrons and possessions are safer since there is no entry to the parking areas of the garage. Moreover, automated environments are safer as there are no accidents due to vehicles being driven in the garage, and no slip and fall accidents due to patrons walking to and from their vehicles. Finally, the total excavation can be reduced hence reducing construction costs and accelerating the project’s delivery time to market.

Parking Development Solutions is at the forefront of automated parking systems in this area. Its principals are Fred Gorove, Marc Slavin, and Stylianos Christofides, each of whom brings particular expertise to the organization. Assisted by Lindsley Williams, PDS has reviewed the proposed regulations in considerable detail, and request consideration be given to recognizing automated parking as a “by-right” alternative to conventional solutions.

Enclosed please find our comments and specific recommendations relating to pertinent portions of Subtitle B's definitions for automated parking and garages, and Subtitle C's parking or parking-related provisions.

Thank you for your consideration of this letter and all its supporting documentation.



Frederick E. Gorove

Enclosure

cc: Harriet Tregoning
Jennifer Steingasser
Joel Lawson

About Parking Development Solutions (PDS), Its Co-Founders, and Our Zoning Consultant:

Parking Development Solutions – PDS is organized to facilitate the planning, design, implementation and operation of automated parking systems. The firm was co-founded in early 2013 by Fred Gorove, Marc Slavin and Stylianos Christofides.

Frederick E. Gorove – Co-Founder and past President Gorove Slade Associates. Gorove/Slade's practice was established in 1979 and progressed to become a firm with a national practice in traffic engineering, parking planning and transportation planning. As part of this practice, The firm has planned and designed parking facilities for public and private entities in most US states and international clients. Mr. Gorove's practice as a professional engineer includes more than 20 years' experience planning automated parking garage systems and working with multiple system providers and designers to facilitate the implementation of parking systems.

Marc Slavin – President and Founder of MarcParc, a Washington, DC operator of commercial parking garages and valet services, established in 1996. MarcParc provides a comprehensive list of parking and transportation services and is an innovator of automated and mechanical parking systems. MarcParc has designed and managed in excess of 500 parking operations and currently manages 20,000 spaces in DC. MarcParc also operates a training "University" that has resulted in the highest quality valets and garage operating personnel in the city.

Stylianos Christofides – Developer, Civil and Structural Engineer, and past Principal of ICG Properties. Stylianos has over 16 years of real estate activity in Washington DC developing and managing over 500,000 square feet of all product types including Class A office, single family residential and mixed use residential with retail.

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Lindsley Williams – Land Use Planner and Zoning Consultant (1998-present). Former member of the Zoning Commission (1981-1988) during which time the Zoning Commission previously reviewed and amended provisions relating to parking and loading.

Relating to Subtitle C:

The proposed regulations already provide much of what **Parking Development Solutions** recommends. We urge you to retain that policy but with more contemporary expression as you proceed and, particularly if you elect to forego other recommendations, to take steps to revise current regulations to allow automated parking “by right” until the parking regulations are otherwise revised and made effective.

- 1911.4 A mechanized parking system shall meet the requirements of C § 911.3 [accessibility], although individual parking spaces provided as part of the mechanized parking system do not.
- 1912.2 Mechanized parking systems are exempt from the requirements of this section [size and layout requirements].

While we believe these two provisions are appropriate as now written, we suggest that the forthcoming regulations would better reflect current alternatives to ramps and aisles, and to spaces of certain lengths, widths, and heights when “automated parking” is being provided.

Thus, we would urge the Commission to amend both provisions to substitute “An automated” for “A mechanical” in the first and “Automated” for “Mechanical” in the second, and change the few references within the regulations accordingly.

Relating to Subtitle B's "Garage" Definitions:

We are aware that the proposed draft retains a definitions of "garage, mechanical" along with three other variations, "garage, parking", "garage, public", and "garage, repair". To us, the proposed definitions need further review prior to adoption as follows:

The proposed definitions of various types "garages" are found within Subtitle B, as follows, interspaced with our own views on each.

Garage, Mechanical Parking: A building or other structure without repair or service facilities in which parking is accomplished entirely by means of elevators and in such manner that there is no human occupancy other than by the elevator operators anywhere except on the main floor. May also be a public garage.

Comment: To us, there is no further need for this definition as the proposed language at subtitle C above is sufficiently clear as stated and there are few other references in the proposed text to this term. As such, we suggest it be removed in the forthcoming regulations.

Moreover, the term reminds readers of older noisy mechanical systems, none of which are being installed at this time. More troubling are its restrictions on incidental services, limiting movement to elevators (which operate vertically, whereas modern systems also operate laterally), and implies attendants would be allowed if not expected within the storage areas when that is now rarely the case.

Garage, Parking: A building or other structure, or part of a building or structure, not exceeding nine hundred square feet (900 sq. ft.) in area, used for the parking of motor vehicles and having no repair or service facilities.

Comment: We believe this definition was intended to replace the former defined term, "**Garage, private**" and that term should remain among those defined when made effective instead.

There is no proposed definition for what had been "**Garage, parking**". However, if that term needs to be added to the others in the forthcoming regulations, it should not continue to distinguish that use from a "mechanical parking garage" as it is now defined or "automated parking garage" as it may eventually be expressed and defined.

Garage, Public: A building or other structure, or part of a building or structure, over nine hundred square feet (900 sq. ft.) in area, used for the parking of one (1) or more motor vehicles and having no repair or service facilities.

Comment: We believe this definition was intended to replace the former defined term, “**Garage, parking**”; here, however, we think the new term is preferable, but recommend its details be revised to allow incidental services.

Where modern garages have attendants, “incidental services” can reduce special purpose trips for services elsewhere while the vehicle is parked there; this benefits vehicle owners and, at least within a fully enclosed garage, creates no adverse impact or added trips. Services vary but include car washing, vacuuming, and helping solve other problems such as flat tires and dead batteries, something that attendants can provide with to better serve those parking. . As stated, the restriction also seems at odds with policies to provide electric charging stations. The language of the present defined term, “Garage, public storage, provides suitable language which should be adapted, supplemented, and incorporated here by expressly allowing “... electric charging, minor repairs, ~~greasing~~, washing, or similar services are incidental to its primary use for the parking of motor vehicles”.

Garage, Repair: A building or other structure, or part of a building or structure, with facilities for the repair of motor vehicles, including body and fender repair, painting, rebuilding, reconditioning, upholstering, equipping, or other motor vehicle maintenance or repair.

Comment: The definition appears to be appropriate as proposed; it is identical to the present definition.

Relating to Subtitle B's Definition of Gross Floor Area (GFA):

The proposed definition of "Gross Floor Area" ("GFA") also warrants discussion and revision. As proposed, the definition of GFA reads as follows:

Floor Area, Gross (GFA): The sum of the ~~total~~ horizontal areas of all of the floors of all buildings on a *lot*, measured from the exterior faces of exterior walls and from the center line of walls separating two (2) *buildings*.

GFA shall include *basements*, elevator shafts, and stairwells at each story, floor space used for mechanical equipment, covered parking and ramps with structural headroom of six feet, six inches (6 ft., 6 in.), or more, penthouses, attic space, whether or not a floor has actually been laid, providing structural headroom of six feet, six inches (6 ft., 6 in.), or more, interior balconies and mezzanine.

GFA shall not include *cellars*, exterior balconies that do not exceed a projection of six feet (6 ft.) beyond the exterior walls of the *building*, all projections beyond the *lot line* that may be allowed by other Municipal codes, vent shafts, and pipe chaser¹ shafts above the ground floor, atriums above the ground floor, ramps on the ground floor leading to a parking garage on a lower level; and in residential zones, the first floor or *basement* area designed and used for parking or recreation spaces provided that not more than 50% of the perimeter of that space may be comprised of columns, piers, walls, or windows, or similarly enclosed.

Comments: The definition should clarify that areas of "covered parking and ramps" in cellar areas are excluded; as written the definition appears to have all "covered parking" count no matter how far below ground level.²

As to automated parking, the definition of **GFA** should specify how vertical/lateral shuttle systems and surfaces they traverse installed in automated parking systems would count. To us, they are equivalent to elevators but we do not agree that either elevators or shuttles should count on anything more than the first floor where they are at or sufficiently close to or above grade to count in the first place, similar to atriums where only its base floor area is counted and then only to the extent located at a "basement" level or above.

Likewise, surfaces that are used to shuttle vehicles to parking areas that are not used for parking are the equivalent of ramps, and should not count at the first floor or below, including shuttles that descend from the ground level to vehicle storage areas at lower levels.

In a typical multi-level installation, there would be a means by which to get vehicles down (or up) to the level at which they would be stored, then moved laterally to their "space". In automated general warehouses, this occurs in an open passage that is open from its base to the top of the uppermost level. This is feasible for automated parking systems, just on a larger scale. But, some fire safety officials have determined that each level with vehicles must be fire

¹ "Chaser" appears to be a typographical error; likely "chase" is the intended word.

² Note that the same over-reaching of the definition to apply at all levels seems to affect "elevator shafts, stairwells, and floor space used for mechanical equipment".

separated from others, thereby adding surface areas that would not otherwise be required.

Further, as to GFA, please note that the parking storage areas will often have structural headroom that is thin, often somewhat less than six foot, six inches (6 ft., 6 in.) but it will not be occupied by anything but stored vehicles or be empty; there will be no personnel. This “headroom” is far less than that on other “floors.” Thus, we suggest that “vehicle storage areas” in an automated setting be measured above grade so that “floors” used in automated systems obtain a reduction in proportion to their combined headrooms versus the headrooms of the occupied portion of the building. So, if automated parking areas have an average headroom in a given building of 6 feet and the building has an average headroom of 9 feet, then the GFA for floors above the first would be treated as 6/9ths (two thirds) of that of other floors. Note that this would promote use of rear areas of building’s ground floors where retail heights are often twice that of typical automated storage systems, whose first floor occupancy would already not count and the second would not be at full cost to overall GFA and FAR limits. We further note that “thin” vehicle storage areas partially below ground level may not work as intended in the “perimeter rule.”

Finally, we suggest that the portion of the definition about “ramps ... leading to a parking garage” be changed to be something more inclusive, as in “ramps ... leading to parking areas or where vehicles enter or depart automated portions of automated storage systems.”

Possible Resolution of Over Inclusiveness of GFA as Proposed:

Floor Area, Gross (GFA): The sum of the ~~total~~ horizontal areas of all of the floors of all buildings on a *lot*, measured from the exterior faces of exterior walls and from the center line of walls separating two (2) *buildings*, **as follows.**

GFA shall include *basements*, **and, at or above basement levels**, elevator shafts, ~~and~~ stairwells at each **such story**, floor space used for mechanical equipment, covered parking and ramps with structural headroom of six feet, six inches (6 ft., 6 in.), or more, penthouses, attic space, whether or not a floor has actually been laid, providing structural headroom of six feet, six inches (6 ft., 6 in.), or more, interior balconies and mezzanines.

GFA shall not include *cellars*, **and, at or above basement levels**, exterior balconies that do not exceed a projection of six feet (6 ft.) beyond the exterior walls of the *building*, all projections beyond the *lot line* that may be allowed by other Municipal codes, vent shafts, and pipe **chase**³ shafts above the ground floor, atriums above ~~the ground floor~~ **their lowest floor level**, ramps on the ground floor leading down to a parking garage **or the area in which automated parking systems accept vehicles into or return them from storage**; and in residential zones, the first floor or *basement* area designed and used for parking or recreation spaces provided that not more than 50% of the perimeter of that space may be comprised of columns, piers, walls, or windows, or similarly enclosed.

Do “basement” and “cellar” definitions need conforming modification?

Finally, would it not make sense to consider if the proposed definitions of “*basement*” and “*cellar*” should be changed to the proposed 6 foot standard (or whatever that becomes, if adopted) instead of retaining their present four foot of headroom standard going forward?