This document lists all the questions posed to the moderator and presenter during webinar HKC1501: *Design Principles for Smaller Dwelling Units*. The questions have been grouped into five subjects: [*code*](#_Questions_about_code:), [*accessibility*](#_Questions_about_accessibility:), [*climate*](#_Questions_about_climate:), [*tiny houses*](#_Questions_about_tiny), and [*other*](#_Other:). Questions appear in black; presenter’s answers appear in red.

HKC1501: Questions and Answers

# Questions about code:

* Ship's ladder is allowable under WA-State exception to code for lofts under 200 SF.
* Do ship's ladders meet the international building residential codes?
* Doesn’t code require a full stair to any "habitable" space? How do you get away with ladders to lofts?
* It seems planning ordinances tend to dictate lot size as well as minimum building s.f. This seems to be a major issue stumbling block. Can you comment?
* What limitations, if any, have you experienced when designing small when satisfying local building codes? Any examples?
* How do you address ladder access to loft or bunk spaces under building codes?

Panelist response:

* The question asked most often is about access to lofts using ship’s ladders or other and if that meets code. It is my understanding that the IBC and other general residential building codes do not allow ladders or ships ladders for access to habitable areas. As noted by one viewer’s comments, there are exceptions. From the WA State code, it states:

EXCEPTION: Stairs or ladders within an individual dwelling unit used for access to areas of 200 square feet (18.6 m2) or less, and not containing the primary bathroom or kitchen.

In addition to exceptions to existing codes, some jurisdictions are beginning to consider relaxing some of these requirements, such as those promoting Cottage Developments.

Regarding planning ordinances dictating lot size and minimum building s.f., the standards vary considerably from one municipality to another. There are numerous examples where some form of exclusionary zoning has resulted in landmark court cases (Euclid v. Ambler, 1926), but most municipalities are required to have a variety of housing options and sizes in their comprehensive plan. This indeed may result in neighborhoods with minimum lot sizes and minimum house sizes that don’t respond to many of the issues mentioned in this webinar. What is needed, I believe, is for cities to understand why smaller lot sizes and small dwelling units, in some areas of their city, can contribute in a very positive manner. In addition, even with minimum lot sizes, many allow for Accessory Dwelling Units (ADUs) and those ADUs may have a minimum size (e.g., 300 s.f.) but most often have a maximum square footage (e.g., 800-1,000 s.f.).

# Questions about accessibility:

First, while single-family-homes, two or more story units, units in buildings with fewer than four units, are all exempt from the Fair Housing Act, I believe we should strive to address the needs of all individuals in some form whether a code exempts an accessibility requirement or not. While multiple level row houses would be exempt, providing a bedroom and fully accessible bathroom on the first floor would allow for access for individuals needing it. This is especially relevant for not only those people with disabilities, but also older individuals such as a parent or grandparent moving in with his or her children. Admittedly, with windows typically limited to the two ends of a row house, providing a bedroom on the fist floor presents some design challenges to have access to the rear (patio or yard) without having to go through the bedroom or make the unit much wider than normal. However, there are ways, especially on end units.

* Most examples have been single-family homes. What about multi-family? It is particularly challenging to do small multi-family units that meet Fair Housing and accessibility requirements. Thanks! Yes, this is a challenge at times, but creative design can address many of these issues. The main design problem, I believe, is less about minimum sizes in bathrooms and kitchens, but designing efficient units that meet the minimum clear pathways, as well as maneuvering areas adjacent to beds, etc. Thinking about the design of rooms with furniture arrangements in mind can lead to strategies for more efficient (read smaller) units.
* Any thoughts about multi-family houses?
* How can smaller houses address the growing need for Aging-In-Place living?
* Smaller houses are ideal for Aging-In-Place living, especially Accessory Dwelling Units on a property. Typically most single-family house neighborhoods don’t offer many options for downsizing when an individual or couple no longer needs the large house they may have raised a family in. However, they may really like the neighborhood and their neighbors, but few options exist. Moving into the ADU may be a solution. Building one before the desire to downsize allows for the ADU to be a rental unit, or perhaps for a relative. When the time comes to downsize, moving into the ADU and renting out the main house might be a good option. The site design then becomes critical to provide appropriate outdoor space and privacy for each unit.
* Have you found good examples of small houses that accommodate accessibility and or aging in place principals? ADUs
* Treat the entire house has an accessible house with grabs; the small multipurpose room is really a minimal travel footprint!
* What would you propose for accessibility for older people? As people age, they tend to have an increasing number of mobility issues. A lot of the photos show alcoves and ship ladders etc. which would be very difficult to someone using a walker or a cane. [Some] designs are notorious for their poor accessibility (due to their nooks and crannies and numbers of steps. I'm interested to hear how you would address this issue.
* One way of addressing accessibility issues is that instead of ignoring the issue because a unit is exempt, is to provide a series of options for various users, so the accessible bathroom and bedroom on the first floor could be a primary way of addressing the issue, while some other less accessible areas could be appropriate for others such as small children.
* Can you discuss building for the long term in terms of aging in place with the required accessibility versus small/tiny housing? I don’t think these are mutually exclusive. Just requires creative design strategies.
* I think you still need to address designing spaces for very large people even if you make the neighborhoods more walkable. These people aren't going to go away. Very interesting question. While I still believe treating the *symptom* is better than waiting to treat the *condition*, I think it comes back to being creative in the design. Pathways within a unit may not need to be wider, only the specific functions with the appropriate sized elements such as chairs, etc. You probably don’t need to design every unit to address this issue, but having options for people to choose is beneficial. While I am not advocating that all new housing be small homes on small lots, providing a greater diversity would seem desirable.
* In your design of smaller residential projects, do you design differently for larger Americans (in physical size) as has been a cultural development? Again, a good question to consider for providing some units in a multi-family housing project that address this issue. I think for most individual clients, their needs, no matter what is unique about them, need to be addressed and our role is as a designer to assist them in making their living conditions the best we can provide.

# Questions about climate:

* Didn't see any examples for cold urban climates; and double height spaces represent volumes to be heated without usable floor space. Do you have examples of buildings in the northeast? Also, none of these work for aging-in-place.
* Talk about northeast and cold Midwest climates?
* You spoke about context. Therefore could you explain the contrast between in designing for various climates and terrains?

Panelist response:

* Every project is unique. Context, climate, the culture, the program, the users, all have to be considered. As we all know, there are proven methods of passive heating through the use of proper building and fenestration orientation, building materials and construction techniques (e.g., high mass floors/walls). There are many examples of properly oriented houses taking advantage of solar radiation, even in cold climates. I am especially interested in seeing how Passive House strategies, that are inherently very tightly constructed with high R-value walls, can also be used to promote some of the indoor – outdoor relationships I talked about.

# Questions about tiny houses:

* Without question; Tiny Homes, less than 500SF, should be addressed as well as Tiny Homes Communities.
* From the title of this webinar, I thought this was about the truly small dwelling unit of 350 to 600 sf, typically in attached multifamily dwelling contexts...I would suggest more focus on this in a future webinar instead of what appear to be mostly single family detached examples. I am also intrigued by detached 400-600 sf cottage designs built onto trailer platforms, like the mobile courtyard motel & residential units I recently saw on TV that gives new meaning to the idea of trailer court, but also makes for a $40,000 affordable house. These would make for a good deeper dive on this topic. One issue to consider is one of modular vs. manufactured homes (formerly trailers or mobile homes). Zoning, financing, and perception all play important considerations in these. Manufactured homes (on an integrated chassis with wheels) are not allowed, by zoning, in many residential areas. Also, financing tends to be similar to car loans. Modular homes, on the other hand, are prefabricated (in sections), taken to a site on a flatbed trailer, and then lifted onto a permanent foundation (concrete). Financing is typically consistent with site built homes.
* not a question but a comment - just stayed a new eco community cabin - prefab tiny cabins that can sleep 4 and include many of the principles discussed - called Blue Moon Rising Cabins -located at Deep Creek Maryland
* Question for Michael . . . what does he think about Micro Units? Examples are being in Portland and Seattle. I think for many individuals, Micro Units provide a great alternative to traditional apartments. From a development point of view, they work extremely well where a maximum floor area ratio is used instead of a limited density requirement. If density is used that is not large, and with the use of very small units, the entire site is not being utilized to the best degree. F.A.Rs, if high, allow for the micro-units to be accommodated easily on a site. The other issue however, is that the square footage costs for a micro-unit is much greater than larger units with only one bathroom and kitchen.
* The single-family homes shown in the presentation are good ideas but it seems that to make a real difference housing needs to be denser and multi-family. Agreed.
* Would love a tiny house webinar! Thanks.
* Panelist response:
Good suggestions for future discussions. With some emails encouraging me to do a slightly revised version of this, possibly at AIA national next year, addressing some additional issues seems very appropriate.

# Other:

* Under the section "What people want in Housing", can you talk more about the question mark next to "Sense of Community"? Yes. I question whether or not everyone really does want a sense of community. Again, I don’t think we need to design every community the same way, but opportunities for more walkable neighborhoods with a greater sense of community would seem desirable for many.
* Could you expand on the proposed size of a 'smaller lot'? Outdoor space or a garden can offer good benefits, especially to smaller housing. How small is small enough and how small is too small (if there is such a thing)? I think these are all design problems and depend on a number of factors. I teach a housing design studio every fall consisting of a series of short nine-day projects, each addressing a different housing typology (students refer to this as the *Boot Camp Housing Studio*). The first typology is a single-family-detached house with an ADU on a 40’ x 100’ lot, thus 4,000 s.f. The house is intended to be a maximum of 1,250 s.f., and the ADU can be 400-600 s.f. Zero-lot line is allowed. Parking off of an alley is at the rear (one parking space for the main house, one for the ADU). We see very creative solutions to this size of a lot.
* A colleague of mine lives in a 1,200 s.f., two-story house on a 3,000 s.f. lot. It is wonderful. Great patio space off of the main “great room.” House is however, only 10 feet from the front property line, but it works nicely.
* I believe some form of attached housing, perhaps courtyard houses, each with private on-grade outdoor space, which can be on very small lots, can be one strategy for the future. These could easily be on 2,000 s.f. lots or less.
* Can you do another presentation with plans/sections of small houses? Maybe at AIA national.
* Good program; I would enjoy more of this kind of program
* Do you have any thoughts on parking for multiple dwelling units on a small lot? Other than relaxing some sizes, probably a design issue again. Taking advantage of back-up space if alleys are in place can eliminate additional driveways; consideration for tandem parking (probably only practical for use by individual units that require two parking spaces), ADUs above a garage or carport, while not accessible for some, may help with the space needed for parking.
* Can you speak to multi-unit housing as in apartments or free standing clusters? A few years ago I, along with a colleague, administrated a national housing design competition for Courtyard Housing in Portland. Our intent was to not only produce a brochure of winning entries, but also, and perhaps more importantly, produce a series of design principles for courtyard housing; almost all would also apply to other house types. You can see the design principles at:

http://www.courtyardhousing.org/downloads/catalogue\_lowres.pdf

* I wonder if you might also comment on innovative ideas for bathrooms. It seems to me there's a huge push for MORE bathrooms and they take a lot of space esp. in small housing. But what can you do to accommodate this growing demand? Instead of providing additional bathrooms for every bedroom as well as separate guest bathrooms, providing a bathroom that is jointly used by two bedrooms, perhaps compartmentalizing uses (e.g., separate access to toilet and bath but with access to sinks at all times). Years ago, working in Los Angeles, Charles Moore would grab a few of us on a Friday afternoon and take us out to a job site and talk about the house design. Eventually he would always end up talking about the bathroom (and/or water). Some of the nicest designs, albeit very simple, of bathrooms you can imagine. Many with a view or access to a very small private outdoors garden, perhaps with a hot tub and the exterior wall was all glass with a glass door. The sequence of showering, using the hot tub, etc., was very special. And the enclosed space was no larger than a typical 5’ x 8’-6” bathroom. A guest bathroom, if probably located, can also serve a bedroom if the visual privacy issues are resolved.
* Comment: circulation is spoken of in negative terms, as wasted space in small units. I would contend that the organization and accommodation of circulation is even more critical in a small unit, particularly in households with more than one person. Agreed. Trying to eliminate as much unneeded circulation space is desirable in small unit design. However, if it is absolutely necessary, then making it have multiple functions could be desirable. The example I showed of the Thomas Hacker hallway is one way of accomplishing this.
* This was very interesting and I'd be interested in those other webinars that have been suggested. Especially multi-family housing.