PLANNING STANDARDS

for

GREEN & AFFORDABLE HOUSING DESIGN COMPETITION

2024

Inclusion, Liveability, Sustainability, Resilience & Safety

PAHP
PUNJAB AFFORDABLE HOUSING PROGRAM

Punjab Affordable Housing Program

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Planning Standards for the Green and Affordable Housing Design Competition - 2024

Section 1: Goals and Objectives

1) These Planning Standards may be called the Planning Standards for the Green and Affordable Housing Design Competition 2024, or — in short — PAHP Standards 2024.

2) The primary goal of PAHP Standards 2024 is to enhance the inclusion, liveability, sustainability, resilience, and safety in the residential neighbourhoods:
    a. **Inclusion** to promote cost-efficient but conducive to future upgrading infrastructure networks and subdivisions in support of a diverse mix of housing solutions at various price points responding to different segments of demand (e.g., varied needs, preferences, affordability, etc.) amongst the target group/s.
    b. **Liveability** to prioritize locations with good access/connectivity to urban social and economic opportunities (e.g., education, health, employment) and adequate access to basic services, social amenities, and public spaces including green areas. Ensuring access to good locations without pricing out the target group/s will require higher land-use efficiency, including higher density, and mixed use (infrastructure and housing developments.
    c. **Sustainability** to protect the environment, through green planning and buildings with low-carbon materials, natural ventilation, illumination, energy-efficient construction (e.g., cool roofs, or passive cooling, and), cost-effective renewable energy (e.g., roof-top solar panels, or solar-powered streetlighting), water-saving measures (e.g., rainwater harvesting), waste reduction, and circular economy practices, as well as urban layouts and infrastructure in support of non-motorized transportation (NMT) and mobility, such as cycling and walking.
    d. **Resilience** to ensure compliance with disaster-resistant standards, evacuation planning, climate-responsive designs, and nature-based solutions (e.g., for stormwater retention and urban cooling), energy optimization, infrastructure investment, smart city implementation, and redundancy prioritization for disaster preparedness.
    e. **Safety** to provide safe places for all, including people with special needs, children, the elderly, and women, upholding emergency service access even when other standards are reduced, enhancing road safety (especially for pedestrians and cyclists), and providing streetlights and planning for police, fire, and health services (e.g., police post).

3) Proposals will however need to be carefully balanced to ensure that the efforts to enhance liveability, safety, sustainability, resilience, and/or safety do not render the housing solution unaffordable to the target group/s. Additional non-binding guidelines for are also included in the attached schedules.

Section 2: Planning Standards

4) The participants shall ensure that a housing scheme is planned and designed in accordance with the following planning standards and requirements:

Table 1: Planning Standards

Sr. No.	Land use	Distribution (% of site)	Subcategory (Hierarchy level)	Minimum Width (Feet)
a)	Roads & infrastructure	Maximum 25%	Primary	- For area ≤ 300 Kanal: Min. 60', - For area ≤ 500 Kanal: Min. 80', - For area ≥ 500 Kanal: Min. 100'
			Secondary, if any	60'
			Local distributor, if any	40'
			Local street, if any	20'
			Lanes (NMT), if any	10'
			Galis (pedestrian), if any	5'
		NB: safety requirements apply to narrow roads, see clause (5).		

Sr. No.	Land use	Distribution (land use share)
b)	Public open spaces	Minimum 7%; see clause (6).
c)	Social amenities	Minimum 6%; see clause (7).
d)	Graveyard	Minimum 1%; see clause (8).
e)	Commercial	Maximum 10%; see clause (9).
f)	Residential	See clause (10).
g)	SWM	- Min 10 Marla for scheme up to 500 Kanal and additional 10 Marla for every additional 500 Kanal - Min 5 Marla for residential complex of 20 Kanal to 100 Kanal - Min 3 Marla for housing project of less than 25 Kanal

(5) Regarding roads:

(a) Any roads proposed in super-ordinated plans, such as master plan, outline development plan, structure plan, or other allied plans, shall be accommodated.

(b) Other than roads mentioned in 5(a), it shall be at the sole discretion of the sponsor/developer to plan the road network and determine the hierarchy of roads following the Table 1, subject to meeting the following:

i) For plots without direct access to abutting right of way of 25', maximum building height shall be limited to G+2.

ii) For plots without direct access to abutting right of way of at least 10', maximum building height shall be limited to G+1.

iii) This height restriction shall be applied unless the competent authority permits higher development, or alternative safety measures are provided.

iv) All buildings shall be within 160’ walking distance of (i) a 12’ right of way accessible to fire engines and/or (ii) a fire hydrant, to ensure emergency services.”

(6) Regarding public open spaces:

(a) May include parks, squares, linear parks, green recreational areas, and playgrounds.

(b) Blue infrastructure (e.g., ponds or canals) shall be considered as open spaces and be counted against the area requirement, subject to a maximum of one percentage point (1%).

(c) At least one quarter of open spaces should be vegetated space (i.e., with plants or with an overhead vegetated canopy).

(d) The minimum requirement of open spaces shall be reduced to 4% if roads are developed with integrated green-blue networks meeting the following requirements:

i) Roads of 60’ and wider shall have at least two (2) continuous tree lines with planted swales, and occasional recreational furniture (e.g., benches).

ii) Streets of 30’ and wider shall have at least one (1) continuous tree line and planted swale, and occasional recreational furniture.

iii) Smaller roads should accommodate green-blue-social community squares with tree(s), planted swale(s), and recreational furniture, e.g., by occasional road widening or by locating squares on corners.

(e) Open areas of social amenities may be flexibly allocated to contribute to meeting either the open space or the social amenity land use requirement, but not be double-counted. If so, to facilitate accounting, the plot shall be subdivided, and the portion with open space shall count towards open spaces, and the other one towards amenities. (For example, a playground related to a school, may be provided on a separate plot adjacent to the school, and outside of school hours it can be used as a playground by the public; this playground may be counted towards amenities or towards open space, as the sponsor deems fit.)

(7) Regarding social amenities, it may include:

(a) Education facilities such as primary school, kindergarten, or day-care;

(b) Health facilities such as dispensary, clinic, hospital;

(c) Social, cultural and recreational facilities such as community centre, society office, library, gym;

(d) Religious facilities such as worship place, mosque;

(g) The minimum may be reduced to 4% if the proposal shows that existing amenities in adjacent areas (within maximum 1,000m unobstructed walking distance from all residential plots/subdivisions of the proposed scheme) have sufficient capacity to absorb the scheme's additional population.

(8) Regarding graveyard:

(a) a graveyard or part thereof may be provided off-site (where land may be available at lower cost), subject to the graveyard's entrance being located within 5,000m unobstructed walking distance from any residential plot/subdivision of the proposed scheme.

(9) Regarding commercial, it may include:

(a) Main commercial centre, shopping area, offices (that are not mixed-use buildings as defined under residential).

(b) The maximum commercial land use share shall be increased in exchange for providing affordable housing above the latter's minimum requirement: for every one percentage point (1%) increase above the minimum area for affordable housing as per clause 10 (c) below, the share of commercial area may be increased by one percentage point (1%) above the limit given in Table 1 (e), to a maximum of 30%.

(10) Regarding residential:

(a) the following sub-uses are to be categorized as residential: housing, including mixed-use buildings with at least as many residential as commercial floors.

(b) The following shall be deemed affordable housing units:

i) Affordable housing units as per APHS Rules 2020 revised in 2024, with or without incremental design.

ii) Apartments with carpet area of 600 sq. ft. or less.

iii) Expandable starter core homes with initial carpet area of 300 sq. ft. or less that come with approved planning documents for initial state and a complete model (not precluding the option of prospective owners to expand the starter home in a different way, individual planning approvals provided).

iv) Any combination (mix) of the former categories. If so, the sum of all affordable housing solutions (affordable homes, affordable apartments, and starter core homes) shall satisfy the required quantity of affordable as above.

(11) Regarding other requirements:

(a) Basic services, such as grid station, water filtration plant, shall be provided as may be required;

(b) Additional amenities, such as post office, police station, as may be required.

(c) No minimum parking shall be required; the level of private parking provision shall be determined by the sponsor alone.

Schedule 1: *Non-binding* Guidelines for Roads & Services

1) The right of way (min. width given above) *should* allocate sufficient space for alternative mobility (e.g., walking and cycling), green and blue functions (e.g., trees and plants, and swales for water management), and social functions (e.g., recreation and leisure).

   a. Any road required by super-ordinated plans *shall* comply with the requirements specified in such plans. If feasible, the requirements *should* be met in addition to the super-ordinated requirements.

   b. All other roads (not required by super-ordinated plans) *may* be developed according to the following recommended-only specifications that intend to reduce cost, enhance sustainability and resilience, and improve liveability and safety:

      i. Any road with segregated spaces for motorized vehicles (carriageways) and other modes (e.g., footpath and cycle track) *should* be designed for a maximum speed of 30km/h. (It is deemed prudent to manage speed even if spaces are segregated to improve safety for crossing pedestrians and cyclists, especially for children and the elderly, in addition to other co-benefits such as reduced capital and operation and maintenance costs.) In addition, the cumulative width of the carriage (all lanes for private motorized traffic) *should* be reduced to approximately 40% of the right of way, while the majority (approx.) 60% *should* be allocated to other green-blue-social functions. Where it is not considered feasible to provide the preferred 40:60 split, the cumulative space allocated to the carriageway should be minimized, subject to meeting other requirements (emergency access) and balancing with other Objectives under these Planning Standards.

      ii. Segregated carriageways *should* be designed to improve the safety of pedestrians and cyclists, especially children and the elderly. The speed *should* be limited through careful design, e.g., by considering the following strategies: selecting an appropriate (typically lower-cost) road surface; limiting the carriageway width to maximum 3.5m (one lane for one-way) or maximum 5.5m (two lanes for two-way); temporarily reducing the carriageway at pedestrian crossings to 3m and 4.5m respectively; providing pedestrian crossings at a maximum distance of 120m, and at all intersections of two or more larger roads (local distributor or higher network level); securing pedestrian crossings with speed bumps and/or constructing them as elevated platforms (with up/down ramps for cars).

      iii. Dedicated footpaths and cycle tracks *should each* be continuous (uninterrupted) and free of obstructions (to guarantee passage), and *each* at least 1.50-2.00m wide, ideally wider for roads fetching significant pedestrian traffic or where sidewalks double for other functions. Main roads (primary and secondary) *should* have footpaths on both roadsides, other roads *should* have at least one.

      iv. Dedicated tree and swale lines *should* be continuous (or connected, e.g., by piping), and be at least 1.50-2.00m wide; they *may* also accommodate additional

functions compatible with the green-blue network, such as recreational street furniture. Main roads (primary and secondary) *should* have at least two dedicated tree lines and swales (i.e., one or more on either roadside), other roads *should* have at least one.

v. Any road with shared spaces (not separating carriageway and footpath) *may* be designed for a reduced maximum speed of 10km/h (accelerated walking speed), e.g., by considering the following measures: selecting an appropriate (typically lower-cost) road surface; reducing the space accessible to motorized traffic permanently, e.g., to 3m (one way) or 4.50m (two way); to reduce the space temporarily, only (e.g., 3m for two-way); and/or meandering the driveway (e.g., by alternating trees/planters on both sides of the road).

2) Service provision may be phased for part or all of the site, to reduce initial cost and to maximize affordability, however subject to designing and developing the initial services in a way that they may be easily improved in the future (e.g., a road may be built as a gravel road or with compacted subgrade only, initially, while being future-ready for provision of the final surface). Moreover, all applicable services (e.g., paving of carriageway, footpath and cycle track, stormwater, green and blue landscaping, water, sanitation, electricity, streetlights, etc.) shall be eligible for progressive/phased development and incremental improvement (e.g., of road surface specifications) as the scheme gets populated.

   a. If so, no binding minimum requirements shall apply to initial service provision: solely the scheme sponsor shall decide, at the sponsor's own commercial and non-commercial risk, on the level of initial servicing, subject to the sponsor's assessment of demand: i.e., the needs, priorities, and affordability of the target group.

   b. If so, to design an effective infrastructure network, the sponsor (developer) may consider aligning the phasing strategy with the road network hierarchies:
      i. To reduce the cost of servicing, operation and maintenance at all times, the overall network length should be minimized, subject to not making too large urban blocks to not impede walkability. (E.g., NMT lanes and pedestrian galis may be inserted as narrow passages through larger blocks non-permeable for regular traffic, to improve walkability.)
      ii. To reduce the cost of initial service provision of higher network levels (e.g., larger roads), their lengths should be minimized and their initial standard may be basic (but should be higher than those of lower network levels).
      iii. To reduce the cost of initial service provision of lower network levels (e.g., smaller roads), their level (standard) of services may be of a more basic nature, especially initially. (This is a most effective cost reduction option for developers, as the network of smaller roads tends to be longer than that of larger roads and savings here are most significant. In addition, typically the most affordable housing solutions locate on narrower roads that may be serviced with simpler standards, the cost to be recovered from these lots is minimized and affordability is maximized.)

   c. If so, the sponsor shall provide drawings and costing for initial provision and all improvement phases, plus a timeline for the progressive provision (e.g., incremental network extensions from higher levels/larger roads to lower levels/smaller roads).

d. If so, the sponsor shall determine the stakeholder responsible for making the upgrades — e.g., the developer (seller) or the community (buyer, e.g., homeowner association) — and set up a dedicated mechanism (e.g., community fund kick-started with a share of initial purchase cost) for incremental provision.

e. Further, when informing the public — including but not limited to any marketing information to consumers / prospective buyers — about the scheme, the sponsor shall clearly communicate the level of initial service provision, the initial cost, the additional cost of future infrastructure upgrades up to the completed level, and the responsibilities for any upgrade.

   This requirement does not prevent communicating the vision for the consolidated/upgraded settlement (e.g., with visualizations, text, and tables), but where the former are used, they must be accompanied by communication of the same quality (e.g., same size and quantity of visualization, text or table) on the *initial* standard, the phasing plan, and the incremental cost (at current prices) for the upgrades.

3) Sponsors *should* consider aligning land uses and plot categories with the road network hierarchy, by placing higher value uses and larger plots on higher level roads with better infrastructure access. For example, locating large commercial plots on main roads with good services so that revenue potential can be exploited. On the other hand, the smallest residential plots may be placed on a pedestrian gali and with the most basic, services, to maximize inclusive access to affordable housing solutions. Finally, a large share of open spaces and amenities may be placed at lower-value locations strategically, to minimize the opportunity cost (relative to placing public uses on higher-value plots that could no longer be sold at higher prices). Finally, the road frontage of open spaces and amenities may be reduced so that the networked services located in the road may be enjoyed by revenue-generating land uses and related servicing costs be recovered from the related revenue.

4) Sponsors *should* consider locating public open spaces and social amenities on a walkable green-blue network, and to allow pedestrian (and possibly cycling) passage over these open spaces and amenities, both in order to create a dense recreational and social network.

5) On-street parking *should* be minimized (e.g., limited to parking for people with special needs), to be able to allocate more space to other functions that meet the defined objectives, by maximizing green, blue, and social functions.

   a. Where provided, any parking (on-street or off-street) *should not* unduly disturb interactions between public spaces (e.g., sidewalks) and adjacent uses (e.g., commercial / residential frontages).

   b. The ground parking surface (if any) *should* be permeable.

Schedule 2: General *Non-Binding* Guidelines for Schemes

Nota bene: this is a tentative list of objectives and strategies (e.g., climate-resilient designs) that participants should consider:

Guidelines & Land-use Considerations	
Housing Density	Consider varying housing types (single-family, multi-family), and sizes of plots to accommodate diverse options for affordability.
	Provide multiple housing options/solutions to accommodate diverse needs. (row-houses, low rise apartments/flats, town houses, incremental starter homes)
	Apply appropriate market-based percentage of plot sizes.
Green Spaces	Allocate green areas per resident ratio to curb urban heat island effect.
	Integrate linear green corridors/network alongside larger and smaller roads and corner green spaces.
	Incorporate methods to increase density of trees/vegetation, e.g. introduction of an Urban Forest.
Mixed-Use Development	Encourage mixed-use zones for a vibrant community. i.e. merging Green Open spaces with public spaces / amenities, res/com/amenities
	Corner shops and low-nuisance home-based activities may be permitted in residential mixed use and supporting economic land use zone, with max. 50% floor area dedicated to such non-residential uses.
	Prioritize creating mixed income housing and socio-economically diverse.
	Provide a range of public buildings/amenities to ensure neighbourhoods self-efficiency for the benefit of the community. e.g. educational, community centres, day care, water filtration plant, etc
Walkability	Design pedestrian-friendly neighbourhoods, with extended footpaths/sidewalks in public spaces.
	Consider provision of cycle lanes wherever practical, along with safety median or green verge to segregate traffic.
Safety	Implement safety measures in design and layout to ensure emergency services.
Affordable Design	Reduce the minimum lot (subdivision) size to aid affordability and access to individual plots and starter homes.
	Manage plot (subdivision) size ratios with less frontage and more depth, with a minimum ratio of 1:2 (frontage over depth); no binding maximum ratio shall apply (so that, e.g., a ratio of 1:4 and higher be permitted). Plots (subdivisions) on corners, plots (subdivisions) for more than 4 residential units, and plots (subdivisions) for non-residential land uses shall be exempted from this requirement.
	Incentivize lower ground coverage, while sustaining high densities.
	Consider reduced and appropriate road widths according to road-network hierarchy, e.g. provide galis for pedestrian and emergency vehicle access only.
	Consider reduced and appropriate road lengths according to number of plots in a row.
	Consider utility-efficient designs and durable materials to reduce operation and maintenance costs, and ultimately the cost burden of target populations.

	(E.g., the experience if EDGE shows that, if green design is considered early in the process, construction costs increase only by some 1 percent, while off-take and developer reputation significantly improve, enhancing profits overall.)
Natural Disaster Planning	Buildings meet regional and national safety standards for earthquakes, floods, etc.
	Establish evacuation routes and emergency shelters.
	Plan for residents' safety in the event of natural disasters.
Climate-Responsive Design	Integrate climate-responsive planning and architecture design.
	Design homes that are energy-efficient and adapt to local climates.
	Consider passive design principles for heating and cooling.
	Optimize energy use through natural climate control.
Infrastructure Resilience	Build robust infrastructure for resilience.
	Invest in durable roads, water supply, and sewage systems, subject to the option of phased development as per Schedule 1.
	Implement smart city technologies for monitoring and response.
	Enhance the efficiency and resilience of urban infrastructure.
	Prioritize infrastructure redundancy and backup systems.
Green Building Standards	Adopt national / international green building codes and certifications.
	Encourage energy-efficient, eco-friendly construction practices.
	Promote sustainable building materials and practices.
	Minimize the environmental impact of construction activities.
Renewable Energy	Incorporate renewable energy options.
	Promote solar panels, wind turbines, or other sustainable sources.
	Explore community-wide renewable energy solutions.
	Foster a collective approach to sustainable energy practices.
Water Conservation	Implement water-saving measures in design.
	Use efficient plumbing fixtures & encourage rainwater harvesting.
	Integrate greywater systems for non-potable water use.
	Optimize water usage and reduce the strain on water resources.
Waste Management	Promote waste reduction and recycling practices.
	Design waste management systems that minimize environmental impact, such as segregation at source to facilitate extraction of recyclables and composting of organic waste.
	Foster a circular economy and reduce landfill dependence.