HEADQUARTERS
PAKISTAN CIVIL AVIATION AUTHORITY
JINNAH INTERNATIONAL AIRPORT
INSPECTORATE BUILDING
KARACHI-75200, PAKISTAN
Tel: (92-21) 99242741
Fax: (92-21) 99242676
e-mail: daar@caapakistan.com.pk

Ref *(HQCAA/1117/003/ARAS/KHI-1080)*/576

Date: 22nd July, 2020

HEIGHT CLEARANCE AS PER RULE-68 AND AVIATION SAFETY STANDARDS (CONSTRUCTION SUBJECT TO NOC FROM RESPECTIVE BUILDING CONTROL AUTHORITY)

Kindly refer to your letter number AMBT/549/2020 dated 21st June 2020 regarding the NOC for height clearance.

2. Pakistan Civil Aviation Authority is pleased to inform availability of height of **160 *feet (One hundred sixty feet)* Above Ground Level *(AGL)* or 313 *feet* Above Mean Sea Level (*AMSL*)** high building including over head water tank, antenna, Neon Sign board etc, on roof top at Plot # II, Karim Bhai Cooperative Housing Society, Sector 19-A-1, KDA Scheme-33, Gulzar-e-Hijri, Karachi (245820.62841N 670744.77461E, 245820.17508N 670744.24509E, 245821.62306N 670742.43877E & 245822.16423N 670742.88886E) with the following terms and conditions:-

a) **Construction will begin after NOC from respective building control authority and lifting of ban from courts.**
b) Height of the building should not be more than ***160 feet (One hundred sixty feet) Above Ground Level (AGL) or 313 feet Above Mean Sea Level (AMSL)*** including over head water tank, antenna, Neon sign board etc. on roof top.
c) Obstruction light must be provided on top of the building in accordance with the specification contained in Para 6.2 of chapter 6 of Aerodrome Standard Manual of Pakistan (ASMP) (copy enclosed).
d) The refuse shall not be kept open but always be stored in covered containers to ensure that birds are not attracted.
e) Civil Aviation Authority shall not accept liability for any loss(s)/damage(s) /inconvenience suffered due to noise or other aviation related activities or any other claim by other Organizations/person(s).
f) Civil Aviation Authority reserves the right to cancel the said clearance if the terms & conditions are not complied.
g) This NOC is only valid **FOR HEIGHT CLEARANCE FOR FLIGHT SAFETY PURPOSES** and **does not cover the NOCs** for construction and other purposes required **from Building Control Authorities, organizations, agencies etc.**
h) **Clearance from Director Air Traffic Services, Air Headquarters PAF, Islamabad must also be obtained before the start of work. Height cleared by CAA or PAF whichever is lower will be considered as final permissible height.**
i) Completion of work is also required to be notified to HQCAA for the issuance of notices to the Aviators.

3. This Clearance is only related to the permissible height at proposed location and does not absolve the holder for fulfilling requirement of other concerned departments. Moreover, any omission due to submission of incorrect data or marginal error **shall not entitle** the holder for any claim whatsoever in future. **In addition at any stage if, any dispute of land on the said survey numbers arises with CAA, this clearance shall stand canceled immediately.**

Encl: As stated in Para 2(c)

(ZUBAIR GHAZI)
Director
Airspace & Aerodrome Regulations

To,
Secretary Al-Mohallatul Burhaniya Trust,
Al-Burhan Arcade, Plot # SF-18, Block-E
North Nazimabad,
Karachi.

Copy to:-
- DG SBCA, Karachi.
- Director ATS, Air Headquarters, Islamabad.
- Airport Manager JIAP, Karachi
- AdID AIM HQCAA.
- A/AdID Procedure Design, HQCAA.

Table 6-3 Light distribution for medium and high intensity obstacle lights according to benchmark intensities of table 6-1

Benchmark intensity	Minimum requirements					Recommendations				
	Vertical elevation angle (b)			Vertical beam spread (c)		Vertical elevation angle (b)			Vertical beam spread (c)	
	0°		-1°			0°	-1°	-10°		
	Minimum average intensity (a)	Minimum intensity (a)	Minimum intensity (a)	Minimum beam spread	Intensity (a)	Maximum intensity (a)	Maximum intensity (a)	Maximum intensity (a)	Maximum beam spread	Intensity (a)
200 000	200 000	150 000	75 000	3°	75 000	250 000	112 500	7 500	7^0	75 000
100 000	100 000	75 000	37 500	3°	37 500	125 000	56 250	3 750	7^0	37 500
20 000	20 000	15 000	7 500	3°	7 500	25 000	11 250	750	N/A	N/A
2000	2000	1 500	750	3°	750	2 500	1 125	75	N/A	N/A

Note.— This table does not include recommended horizontal beam spreads. 6.2.1.3 requires 360° coverage around an obstacle. Therefore, the number of lights needed to meet this requirement will depend on the horizontal beam spreads of each light as well as the shape of the obstacle. Thus, with narrower beam spreads, more lights will be required.

(a) 360° horizontal. All intensities are expressed in Candela. For flashing lights, the intensity is read into effective intensity, as determined in accordance with the Aerodrome Design Manual, Part 4.
(b) Elevation vertical angles are referenced to the horizontal when the light unit is leveled.
(c) Beam spread is defined as the angle between the horizontal plan and the directions for which the intensity exceeds that mentioned in the "intensity" column.

Note.— an extended beam spread may be necessary under specific configuration and justified by an aeronautical study.

6.2.2.6 Low intensity obstacle lights, Type C, displayed on vehicles associated with emergency or security shall be flashing-blue and those displayed on other vehicles shall be flashing-yellow.

6.2.2.7 Low intensity obstacle lights, type D, shall be displayed on follow-me vehicles.

6.2.2.8 Low intensity obstacle lights on objects with limited mobility such as aerobridges shall be fixed-red, and as a minimum be in accordance with the specifications for low-intensity obstacle lights, type A, in table 6-1. The intensity of the lights shall be sufficient to ensure conspicuity considering the intensity of the adjacent lights and the general levels of illumination against which they would normally be viewed.

6.2.3 *Fixed objects*

Note.— *The fixed objects of wind turbines are addressed separately in 6.2.4 and the fixed objects of overhead wires, cables, etc. and supporting towers are addressed separately in 6.2.5.*

Marking

6.2.3.1 All fixed objects to be marked shall, whenever practicable, be coloured, but if this is not practicable, markers or flags shall be displayed on or above them, except that objects that are sufficiently conspicuous by their shape, size or colour need to be otherwise marked.

Marking by colour

6.2.3.2 **Recommendation** – *An object should be coloured to show a chequered pattern if it has essentially unbroken surfaces and its projection on any vertical plane equals or exceeds 4.5 m in both dimensions. The pattern should consist of rectangles not less than 1.5 m and not more than 3 m on a side, the corners being of the darker colour. The colours of the pattern should contrast each with the other and with the background against which they will be seen. Orange and white or alternatively red*

and white should be used, except where such colours merge with the background. (see figure 6-1).

6.2.3.3 **Recommendation** – *An object should be coloured to show alternating contrasting bands if:*

a). *it has essentially unbroken surfaces and has one dimension, horizontal or vertical, greater than 1.5 m, and the other dimension, horizontal or vertical, less than 4.5 m; or*

b). *it is of skeletal type with either a vertical or a horizontal dimension greater than 1.5 m.*

The bands should be perpendicular to the longest dimension and have a width approximately 1/7 of the longest dimension or 30 m, whichever is less. The colours of the bands should contrast with the background against which they will be seen. Orange and white should be used, except where such colours are not conspicuous when viewed against the background. The bands on the extremities of the object should be of the darker colour. (see figure 6-1 and 6-2).

***Note** –Table 6-4 shows a formula for determining band widths and for having an odd number of bands, thus permitting both the top and bottom bands to be of the darker colour.*

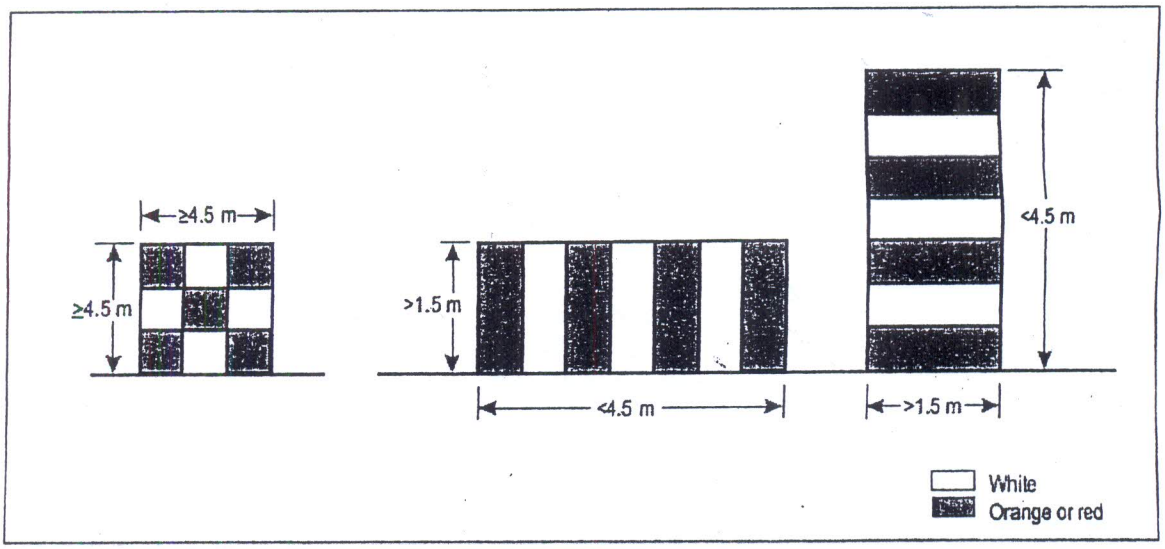


Figure 6-1. Basic marking patterns

Table 6-4. Marking band widths

Longest dimension		
Greater than	Not exceeding	Band width
1.5 m	210 m	1/7 of longest dimension
210 m	270 m	1/9 " " "
270 m	330 m	1/11 " " "
330 m	390 m	1/13 " " "
390 m	450 m	1/15 " " "
450 m	510 m	1/17 " " "
510 m	570 m	1/19 " " "
570 m	630 m	1/21 " " "

6.2.3.4 **Recommendation** – *An object should be coloured in a single conspicuous colour if its projection on any vertical plane has both dimensions less than 1.5 m. Orange or red should be used, except where such colours merge with the background.*

Note *– Against some backgrounds it may be found necessary to use a different colour from orange or red to obtain sufficient contrast.*

Marking by flags

6.2.3.5 Flags used to mark fixed objects shall be displayed around, on top of, or around the highest edge of the object. When flags are used to mark extensive objects or a group of closely spaced objects, they shall be displayed at least every 15 m. Flags shall not increase the hazard presented by the object they mark.

6.2.3.6 Flags used to mark fixed objects shall not be less than 0.6 m on each side.

6.2.3.7 **Recommendation** – *Flags used to mark fixed objects should be orange in colour or a combination of two triangular sections, one orange and the other white, or one red and the other white, except that where such colours merge with the background, other conspicuous colours should be used.*

Marking by markers

6.2.3.8 Markers displayed on or adjacent to objects shall be located in conspicuous positions so as to retain the general definition of the object and shall be recognizable in clear weather from a distance of at least 1000 m for an object to be viewed from the air and 300 m for an object to be viewed from the ground in all directions in which an aircraft is likely to approach the object. The shape of markers shall be distinctive to the extent necessary to ensure that they are not mistaken for markers employed to convey other information, and they shall be such that the hazard presented by the object they mark is not increased.

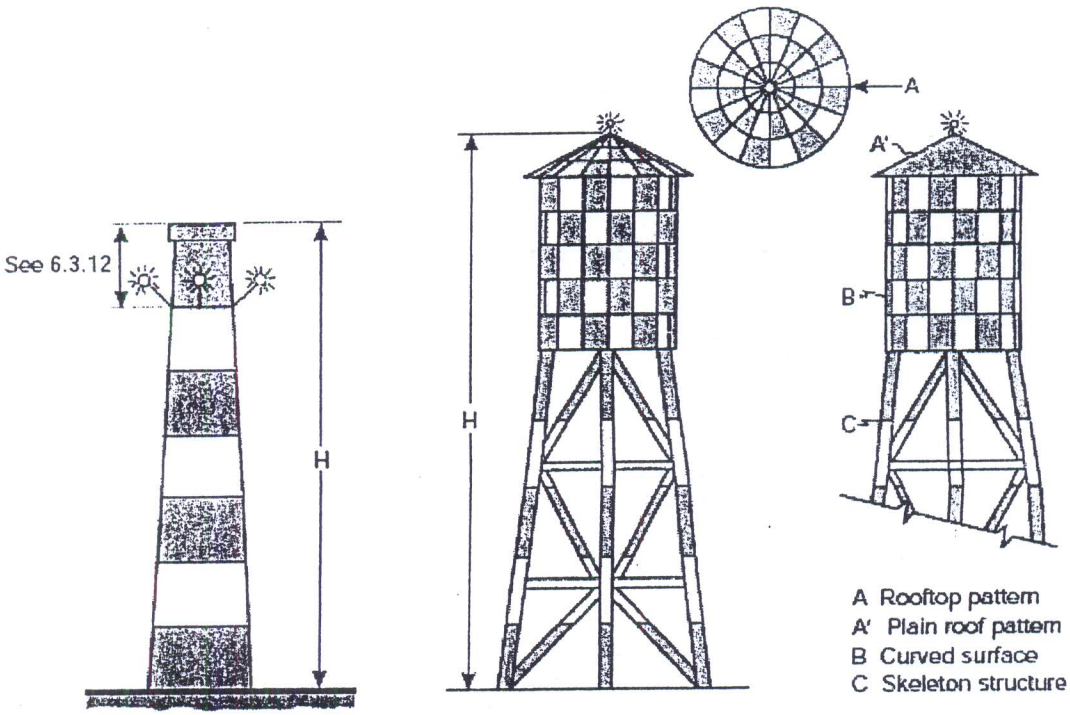
6.2.3.9 **Recommendation** – *A marker should be of one colour. When installed, white and red, or white and orange markers should be displayed alternately. The colour selected should contrast with the background against which it will be seen.*

Lighting

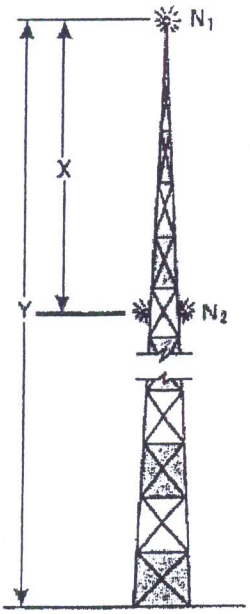
6.2.3.10 In case of an object to be lighted one or more low-, medium- or high-intensity obstacle lights shall be located as close as practicable to the top of the object.

Note *– Recommendations on how a combination of low-, medium-, and/or high-intensity lights on obstacles should be displayed are given in Appendix 6.*

6.2.3.11 **Recommendation** – *In the case of a chimney or other structure of like function, the top lights should be placed sufficiently below the top so as to minimize contamination by smoke etc (see figure 6-2).*



Note.— H is less than 45 m for the examples shown above.
For greater heights intermediate lights must be added as shown below.



Light spacing (X) in accordance with Appendix 6

$$\text{Number of levels of lights} = N = \frac{Y \text{ (metres)}}{X \text{ (metres)}}$$

Figure 6-2. Examples of marking and lighting of tall structures

6.2.3.12 In the case of a tower or antenna structure indicated by high-intensity obstacle lights by day with an appurtenance, such as a rod or an antenna, greater than 12 m where it is not practicable to locate a high intensity obstacle light on top of the appurtenance, such a light shall be located at the highest practicable point and, if practicable, a medium-intensity obstacle light, type A, mounted on the top.

6.2.3.13 In case of an extensive object or a group of closely spaced objects to be lighted that are:

a). penetrating a horizontal OLS or located outside an OLS, the top lights shall be so arranged as to at least indicate the points or edges of the object highest in relation to the obstacle limitation surface or above the ground, and so as to indicate the general definition and the extent of the objects; and

b). penetrating a sloping OLS the top lights shall be so arranged as to at least indicate the points or edges of the object highest in relation to the obstacle limitation surface, and so as to indicate the general definition and the extent of the objects. If two or more edges are of the same height, the edge nearest the landing area shall be marked.

6.2.3.14 **Recommendation** - *When the obstacle limitation surface concerned is sloping and the highest point above the obstacle limitation surface is not the highest point of the object, additional obstacle lights should be placed on the highest point of the object.*

6.2.3.15 Where lights are applied to display the general definition of an extensive object or a group of closely spaced objects, and

a). low-intensity lights are used, they shall be spaced at longitudinal intervals not exceeding 45 m.

b). medium-intensity lights are used, they shall be spaced at longitudinal intervals not exceeding 900 m.

6.2.3.16 High-intensity obstacle lights, Type A, medium-intensity obstacle lights, Types A and B, located on an object shall flash simultaneously.

6.2.3.17 **Recommendation** – *The installation setting angles for high-intensity obstacle lights, Type A, should be in accordance with Table 6-5*

Note *– High intensity obstacle lights are intended for day use as well as night use. Care is needed to ensure that these lights do not create disconcerting dazzle. Guidance on the design, operation and the location of high-intensity obstacle lights is given in the Aerodrome Design Manual, Part 4.*

6.2.3.18 **Recommendation** – *Where, in the opinion of the appropriate authority, the use of high-intensity obstacle lights, type A, or medium-intensity obstacle lights, Type A, at night may dazzle pilots in the vicinity of an aerodrome (within approximately 10 000 m radius) or cause significant environmental concerns, a dual obstacle lighting system should be provided. This system should be composed of high intensity obstacle lights, Type A or medium intensity obstacle lights, Type A, as appropriate, for daytime and twilight use and medium-intensity obstacle light, Type B or C, for night-time use.*

Lighting of objects with a height less than 45 m above ground level

6.2.3.19 **Recommendation** – *Low-intensity obstacle lights, Type A or B, should be used where the object is a less extensive one and its height above the surrounding ground is less than 45 m.*

6.2.3.20 **Recommendation** – *Where the use of low-intensity obstacle lights, Type A or B, would be inadequate or an early special warning is required, then medium- or high-intensity obstacle lights should be used.*

6.2.3.21 **Recommendation** – *Low-intensity obstacle lights, Type B, should be used either alone or in combination with medium-intensity obstacle lights, Type B, in accordance with 6.2.3.22.*

6.2.3.22 ***Recommendation*** – *Medium-intensity obstacle lights, Type A, B or C, should be used where the object is an extensive one. Medium-intensity obstacle lights, Types A and C, should be used alone, whereas medium intensity obstacle lights, Type B, should be used either alone or in combination with low-intensity obstacle lights, Type B.*

Note – *A group of buildings is regarded as an extensive object.*

Lighting of objects with a height 45 m to a height less than 150 m above ground level

6.2.3.23 **Recommendation** – *Medium-intensity obstacle lights, Type A, B or C, should be used. Medium-intensity obstacle lights, Types A and C, should be used alone, whereas medium intensity obstacle lights, Type B, should be used either alone or in combination with low-intensity obstacle lights, Type B.*

6.2.3.24 Where an object is indicated by medium-intensity obstacle lights, Type A, and the top of the object is more than 105 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 105 m.

6.2.3.25 Where an object is indicated by medium-intensity obstacle lights, Type B, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be alternately low-intensity obstacle lights, Type B, and medium-intensity obstacle lights, Type B, and shall be spaced as equally as practicable between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.

6.2.3.26 Where an object is indicated by medium-intensity obstacle lights, Type C, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.

6.2.3.27 Where high-intensity obstacle lights, Type A, are used, they shall be spaced at uniform intervals not exceeding 105 m between the ground level and the top light(s) specified in 6.2.3.10 except that where an object to be marked is surrounded by buildings, the elevation of the tops of the buildings may be used as the equivalent of the ground level when determining the number of light levels.

6.2.3.20 **Recommendation** – *Where the use of low-intensity obstacle lights, Type A or B, would be inadequate or an early special warning is required, then medium- or high-intensity obstacle lights should be used.*

6.2.3.21 **Recommendation** – *Low-intensity obstacle lights, Type B, should be used either alone or in combination with medium-intensity obstacle lights, Type B, in accordance with 6.2.3.22.*

6.2.3.22 ***Recommendation*** *– Medium-intensity obstacle lights, Type A, B or C, should be used where the object is an extensive one. Medium-intensity obstacle lights, Types A and C, should be used alone, whereas medium intensity obstacle lights, Type B, should be used either alone or in combination with low-intensity obstacle lights, Type B.*

Note *– A group of buildings is regarded as an extensive object.*

Lighting of objects with a height 45 m to a height less than 150 m above ground level

6.2.3.23 **Recommendation** – *Medium-intensity obstacle lights, Type A, B or C, should be used. Medium-intensity obstacle lights, Types A and C, should be used alone, whereas medium intensity obstacle lights, Type B, should be used either alone or in combination with low-intensity obstacle lights, Type B.*

6.2.3.24 Where an object is indicated by medium-intensity obstacle lights, Type A, and the top of the object is more than 105 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 105 m.

6.2.3.25 Where an object is indicated by medium-intensity obstacle lights, Type B, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be alternately low-intensity obstacle lights, Type B, and medium-intensity obstacle lights, Type B, and shall be spaced as equally as practicable between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.

6.2.3.26 Where an object is indicated by medium-intensity obstacle lights, Type C, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.

6.2.3.27 Where high-intensity obstacle lights, Type A, are used, they shall be spaced at uniform intervals not exceeding 105 m between the ground level and the top light(s) specified in 6.2.3.10 except that where an object to be marked is surrounded by buildings, the elevation of the tops of the buildings may be used as the equivalent of the ground level when determining the number of light levels.