



A Novel Approach to HOA approval using the SteppIR Urban Beam Yagi – special thanks to customer Steve Rutledge KW7Q for submitting this white paper.

KW7Q Solving my antenna problem

At my current QTH here in Ft. Collins CO, for many years, I used a 20 meter indoor dipole, a few outdoor stealth dipoles and a G5RV to chase DX and attempt to satisfy my love for cw. But as time went on and we entered a new sunspot cycle, I was compelled to improve my antenna situation. In long discussions with my XYL Barb, moving to a new QTH appeared as an option (but more in my mind than Barb's). So for about a year I would show her properties in various places in Missouri and Arkansas, rural properties, thinking we would return close to our roots as we were both born and raised in St. Louis. But I sensed Barb really did not want to move. Besides we love our home, and its very close proximity to 100 miles of bike trails that we use nearly daily. So deep down I probably knew we would not pull the trigger and actually leave Ft. Collins. So there I was, literally pacing around our home and saying, "gosh I wish I had a better antenna"! Was Barb ever tired of me saying those words! So after enough of that, I decided that I would try to get a better antenna here at our QTH. That meant climbing the HOA "wall". Yes, seeking formal approval from our area's Home Owners Association. Could I get their approval, that was the question?

Well the answer was YES! First, I decided to go for the Steppir Urban beam as the antenna offers a low profile look, replacing metallic elements with non-reflecting fiberglass tubes. Furthermore, the antenna covers 6-40 meters with one feedline. And the antenna has gain and decent F/B ratio on 6-20 meters, operating as a folded dipole on 30 and 40 meters. The low profile look and the green color ended up be selling points that my neighbors and the HOA bought into. I think the beam is properly named! This is my honest assessment on my part about an antenna that would give me good performance yet be acceptable in my neighborhood.

The antenna approval process went like this. The so-called Architectural Control Committee (ACC), made up of 6 homeowners, is the group that considers such things like new painting, new decks, and other home improvements (heck my antenna project was a home improvement, right?). The ACC approves or denies each project. A nearby neighbor chairs that committee. I talked to that neighbor about the Urban beam, including showing them a picture of the antenna, discussing where it would be located on my house, etc. Their instructions were clear. Seek approval from your neighbors first. So, I went to my six nearest neighbors with a two page proposal in hand. I met with each neighbor individually. The two page proposal contained a picture of the antenna, photo-shopped to show where it would be located on my house, some details about the antenna (in particular the antenna dimensions), and a little about the hobby of ham radio (such as providing communications in time of emergencies) and last but not least, that



Figure 1. The custom roof mounting system.

ham radio is a dear hobby to me and I want to enjoy it more as I near retirement. I left each neighbor with a copy of the proposal, and simply asked them to consider it, then inform the ACC if they approve or disapprove of the project. I did not want to have them make a decision right when I was talking to them, as I felt that would put pressure on them to approve the project, which they later may end of regretting. All the neighbors submitted their approval, and in fact, copied me on their messages to the ACC. Upon invitation from the ACC, I prepared a formal proposal for the antenna, which amounted to filling out a simple form and attaching the 2-page proposal that I previously gave to the nearby neighbors. The ACC approved the project, and then sent it to the HOA Board for their consideration. I got a short note soon thereafter from the HOA simply stating the project was approved and adding, "enjoy your new antenna"! The formal approval came in early September.

Before I pulled the trigger on purchasing the Urban beam, I wanted to see and hear one in action. A local ham friend of mine, a very accomplished DX'er, was kind enough to invite me over to talk about his Urban beam, and to let me hear it in action (I spotted his beam on one of my bike rides through his neighborhood). We also did a comparison over the phone on signals we were both copying, comparing his Urban beam to my G5RV. I was sold, and promptly ordered one from Steppir (arriving in one week!).

The next issue to deal with was how to install the antenna on the roof of my house (the neighbors would certainly not approve a tower, plus a tower would involve City approvals, etc.). After striking out trying to find a suitable roof tower, I decided to design something from scratch. What I came up with was a steel plate, 16 inch square, and 3/8th inch thick (Fig. 1). This would provide a welded hinged mount for the mast, for which I used 1.5 inch ID, schedule 40 galvanized water pipe. I applied a special gray paint to the mast to help it blend in better with my house, which has grey siding. The mast was then bracketed to the house with a custom bracket, and also secured to the fascia with another custom bracket. I sketched up the design of the base and the brackets after getting on the roof countless times to take measurements and double check things, then contracted with a local metal fabrication shop to build the components. Before the mast and support structures were installed, I had a local contractor reinforce the roof and structure behind the siding with 2x6 planking to provide a solid backing for the galvanized lag bolts. A mast assembly was secured with 1/2 inch by 4 inch galvanized lag bolts. I got a special sealant from my roofing company to seal the area around the roof plate, leaving the bottom side unsealed to allow water drainage. The G5RV was temporarily attached to the mast, awaiting "antenna day"! The mast is one solid support!



Figure 2. The Urban beam on its "test stand" in my backyard.

As the mast support parts were being fabricated, I assembled the Urban beam and checked it electrically. After assembly, I set the antenna up on sawhorses in my backyard (fig. 2). Yes, I certainly connected the RG-213 coax feedline to the antenna and did some listening on it. Also applied 5 watts of power on several bands just to make sure there would be no surprises when the antenna got up on the mast. I was getting excited at this point, realizing that the project was really happening!

December 27, 2022 was “antenna day”, which was a day we had a break from frequent snows and cold temperatures. With the able help of several local hams, the antenna was “strong armed” up the roof after we mounted the Yaesu G-1000DXA rotator to the mast. Then at the end of the day, as the sun was setting in Colorado, the antenna was all checked out and ready to chase DX (Fig. 3).

After a lot of wishing, a lot of fretting, a lot of planning, and a lot of help and encouragement from my XYL Barb of 45 years, and my ham buddies, and of course support from my neighbors, I solved my antenna problem. The Urban beam is working great!



Steve KW7Q

Figure 3. The Urban beam fixed to the mast, as the Sun sets in Colorado.