DIRK HOFER’S
ONE SHEET OF PLYWOOD
DOGHOUSE PLAN

LAKES ANIMAL FRIENDSHIP SOCIETY
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Lakes Animal Friendship Society, in cooperation with the Lakes District Secondary School (LDSS) Industrial Arts Class is pleased to present “DIRK HOFER’S ONE SHEET OF PLYWOOD DOGHOUSE PLAN”.

This plan is available to you free of charge, but donations to support the Northern Dog Shelter project are always welcome via Paypal on our website: www.lakesanimalfriendship.ca or by mail to:

Lakes Animal Friendship Society
Box 49 Southbank BC V0J 2P0

Using plywood and lumber provided by Lakes Animal Friendship Society, Mr. Hofer and his class built thirty dog shelters in the autumn of 2011 for distribution to dogs in need around the Lakes District. Susan Russell’s grade 3/4/5 class at Grassy Plains School gathered community donations of paint and painting supplies, and painted many of these houses. Since then, more houses have been built by LDSS, the William Konkin Elementary Project-based Learning Class, and the College of New Caledonia (CNC piloted flat packs of houses for easy transport and assembly).

In total, the Lakes Animal Friendship Society and its community partners have produced close to 250 shelters—both new and refurbished—for dogs and cats in need since December 2009! And, over two-thirds of these were “Hofer Houses”! It is our sincere hope that this project will be duplicated in other communities, and that other animal welfare groups can find amazingly supportive local teachers and students like Mr. Hofer, Ms. Russell and their classes!
To build the Hofer Doghouse from one sheet of plywood:

You need:
1. one 4’ x 8’ sheet of 5/8” exterior plywood
2. one 8’ long 2x4 or two 8’ long 2x2
3. 1¾” #8 wood screws to assemble the house
4. one piece of windflap material about 18” square to help keep the wind and cold out—indoor/outdoor carpet works well
5. one strip of plywood about 1.5” wide – cut from the opening “scrap” to hold the windflap
6. a few 1¼” screws for the windflap strip
7. one 8’ x 2’ piece of 1½” polystyrene insulation for underneath the bottom and on the lid to create a warm "sandwich" of insulation
8. 8 large washers to use when attaching the insulation
9. exterior wood paint / stain as desired to decorate the final product and protect it from the elements

The finished sizes of the pieces are on the plans.
Step by step cutting directions:

Use a table saw with a 1/8" blade thickness. This project can also be cut with a jig saw or circular saw and a hand saw to complete the cutout for the door.

HANDY TIPS

- Cut the plywood with the good side up—this way any chipping from the saw will be on the inside of the doghouse.
- If you are making multiple doghouses keep the saw setting and make as many of the same pieces as possible. This will speed up production because you will not need to change the saw setting as often.
- Make templates for the dog door and wind flap that you can trace multiple times.
- During assembly, have the screws started in the plywood—this will give you an extra hand to hold pieces with.
- If you want serious production you can divide volunteers into the following stations:
  1. table saw—cutting plywood
  2. chop saw/mitre saw—cutting supports
  3. insulation cutting
  4. door flap cutting
  5. assembly
  6. painting

1. Set the saw up for a 24” cut that will become your back and front of the doghouse (A)

2. Set the saw and cut a 32” strip that will become your sides (B)

3. Take the last piece (C) and cut the bottom piece off at 22¾” wide. The other piece will be your top.

4. The bottom piece will now need to be cut to 32” long.

5. Set the saw at 22” and cut the back piece off from part (A) from step 1. This will also give you the part you’ll need for the front.

6. Measure 26” up one side of part (B) and 22” up the other side. Connect the marks with a straight line. This will give you the pitch of the roof.

7. Cut the diagonal line for the roof.

8. Take a 2x4 that is 8’ long and cut it into two strips that are 1½” X 1½” X 8’. (If you use 2x2 you can save the work of splitting the 2x4 in half.) These strips will be cut into the following lengths
   
   - 2 at 32” for bottom rail
   - 2 at 22” for inside front
   - 2 at 18” for inside back
   - 2 at 22½” for under top
Assemble the pieces:

We found an electric drill with a screw driver insert to be quite efficient.

1. Assemble bottom:
   Place the two 32” rails under the bottom piece and attach with 5 evenly placed screws per side. Make sure ends of rails are flush with bottom. These rails will keep the doghouse bottom off the ground and provide support to hold on sides.

2. Attach sides:
   In the first picture (right) the pre started screws can be seen. This helps a lot if you are assembling the doghouse by yourself. If you have someone to help you, have them hold the sides even with the ends of the bottom.

3. Back Supports:
   Place back supports by placing ends down on the bottom and making sure they are flush with the ends of the side pieces.

4. Attach back:
   Screw back on making sure that screws go into back supports and not into the end grain of the plywood. This would cause the plywood to split. The edges of the back piece will help to line up any non-square sides.
Front Supports:
Repeat the same procedure for the front supports. We used 5 evenly spaced screws on each side.

Layout Front Door:
We used a template and made all doors 7” up from the bottom. The idea is that the extra height of the door from the bottom will keep the straw in later. We made them 12” wide and 14” tall. For smaller dogs they can be made smaller. The mark in the corner is where a hole will be drilled so the jig saw can be used to cut out the opening.

Cut and Attach Front:
After drilling the starter hole, cut the opening out with a jig saw. Place a scrap piece under the plywood to prevent the table from being drilled. Note the rounded corners of the door. You can always go back to make them look nice and square later. Be sure to hang the part you are cutting over the edge of the work table.
Place Top Rails:
The two top rails are placed on top of the front and back supports. They are designed to prevent the top from sliding off, but still allow the top to be lifted off when needed. This makes the cleaning of the dog house easier.

Front and Side Overhang:
We used a 5” overhang for the front and shifted the board until both sides had an even overhang.

Screw on the Top:
Once top has been lined up it can be screwed onto the top rails. Note, the screw must hit the top rail and not the plywood below. Repeat this procedure for the top rail along the back as well. You may need to reach inside and place rail against the front/rear as it will tend to turn a bit when the screw works its way down.
11 Cut pieces of polystyrene about 32" x 19" for the bottom, and 28½" by 22" for the top. You can use a handsaw or a utility knife (handsaw is safer). Save the leftovers, each 2' x 8' sheet will insulate 1½ houses. Attach the insulation underneath the bottom of the house, and underneath the top. Use a large washer with a 1¾" screw through it in four spots around each piece. You will have to dimple the insulation a bit for the screw to hold.

12 Cut a 1½" strip off the door piece you cut out earlier. Cut a piece of windflap material slightly larger than the size of your door PLUS 1½" added to height. Fasten the windflap on the inside of the house at the top of the door. Use the 1¼" screws and drive them through the strip, then the windflap and into the front wall of the house. Screwing the strip on allows the windflap to be replaced if it wears out.

13 Paint the doghouse using an exterior paint or wood stain.

14 Add a bed of straw to make the doghouse even cosier! The straw can be replaced each season when the dog house is cleaned.
Create a flat pack:

For easy transport and on-site assembly, class projects, family involvement, friendly competitions and fundraising possibilities—try a flat pack!

While it is great to have the doghouses finished and ready to go, we have found it very useful to leave the components in flat packs. A flat pack is a full, ready-to-assemble doghouse that can be put together with a screwdriver. Think IKEA furniture, you get the idea! Flat packs can be more easily carried, loaded and transported than a fully assembled doghouse.

To make a flat pack:

1. Assemble bottom as in the instructions.
2. Attach the sides to the bottom rail but use only a couple of screws to hold them in place. Drill the remainder of the screw holes with a 1/8” bit, this makes the assembly of the flat pack a lot easier.
3. Attach the back supports as in the instructions.
4. Attach the back using three screws—two on one side, one on the other—to hold it in place. Drill the remainder of the screw holes.
5. Attach the front supports as in the instructions.
6. Layout and cut the front door as in the instructions.
7. Attach the front using three screws to hold it in place. Drill the remainder of the screw holes.
8. Place the top rails, line up the top and screw it on as in the instructions.
9. Add the insulation to top and bottom, and windflap as in the instructions.
10. Take out the screws along the bottom of the side pieces, and the screws in the front and back pieces. You should have six loose pieces: top with rails and insulation attached, sides with supports attached, front with windflap attached, back, and bottom with rails and insulation attached.
11. Stack the pieces with a sandwich bag of screws—sufficient for all the screw holes plus some extras—and staple the instruction sheet to one of the pieces on the inside of the flat pack.
12. To keep the flat pack nicely secured, we find that polypropylene strapping from ULINE works great. It comes in a kit with metal buckles and tool for cutting and tightening the strapping. We use two straps around the stack as shown in the photo above. The straps are strong enough to use to lift the flat pack which is handy for loading and transport.
To build the Hofer Doghouse from a flat pack kit:

1. Lay the pieces of the dog house kit flat so you can see how they fit together.

2. Insert the screws part way into the pre-drilled holes on the front, back and side pieces.

3. Place the bottom piece on edge—plywood side will be floor of the dog house. Attach the sides by driving screws into the side rail of the bottom piece.
4. Attach the back piece. Start with the screws in the two top corners so you can "square up" the house before driving the rest of the screws.

5. Attach the front piece. Start with the screws in the two top corners so you can "square up" the house before driving the rest of the screws.

6. Place the top piece on. OPTIONAL—to secure the top, you can attach with two screws through the top edge of the front and back pieces.
Many dogs like Hunter (below) will have a warmer winter this year!
We hope that the Hofer Doghouse design and instructions will help you to make life better for your furry family member or another animal in your community!

Check our website at www.lakesanimalfriendship.ca for plans for larger and smaller doghouses based on the Hofer Doghouse design. Thanks to Lynsey Falconer, Dirk Hofer, Nick Thompson and James Wingfield for developing these plans so the wee ones and big ones can have a warm, safe shelter just their size!

"Out of the Cold" is our children’s book based on the true story of the doghouse project. It is available as a Kindle edition on Amazon or contact valerie@lakesanimalfriendship.ca to order a hardcopy for $10 including shipping. Discounts are available for bulk purchases and animal welfare organizations.