

# PROJECT 3:

Yacht Design



Denis Schörnig - 22092945 I

DATT-3940: Modelling for 3D Fabrication

By Roch Smith



# DESCRIPTION

I aim to design my own sailing yacht with unique features tailored for crossing the Atlantic Ocean. To achieve this, I plan to create a solid 3D model suitable for 3D printing. Subsequently, I intend to develop an augmented reality application, allowing me to showcase the distinctive aspects of my yacht using an iPhone or iPad. This could include visualizing the water flow beneath the boat, elucidating the impact of the chosen hull shape on performance.

Designing the yacht presented challenges, particularly in modeling the curved and rounded shapes, especially the hull, which essentially defines the ship's design. Precision in scaling was crucial; while creating a cardboard prototype, I realized that my initial measurements didn't capture the correct proportions. Transitioning to Rhino for the first blockout, using simple curves and a reference image, provided a better grasp of the proportions and the flexibility to adjust the object's size more efficiently. Unlike cardboard, Rhino allowed for seamless scaling without needing to create a new piece for every modification. This exploration with cardboard, however, was instrumental in determining the ideal size for the augmented reality experience.

Throughout this journey, I delved into online resources to navigate Rhino's tools, particularly for crafting specialized forms like the propeller and the hull. Tutorials proved invaluable in understanding these tools, although adapting their guidance to suit my project was necessary.

In summary, this project has been an invaluable learning experience in mastering Rhino for my future endeavors. I eagerly anticipate printing the sailboat and creating an AR application to bring it to life.



IDEA



3D Model reference



AR app reference



# RESEARCH VIDEOS

## Design

### Francesco Struglia - Yacht design with Mindesk for Rhinoceros

Francesco Struglia is an industrial designer. His main client is Azimut, for whom he designs luxury yachts. Francesco introduced Mindesk's Virtual

▶ <https://www.youtube.com/watch?v=HsvilJvKtX4&list=WL&index=5>

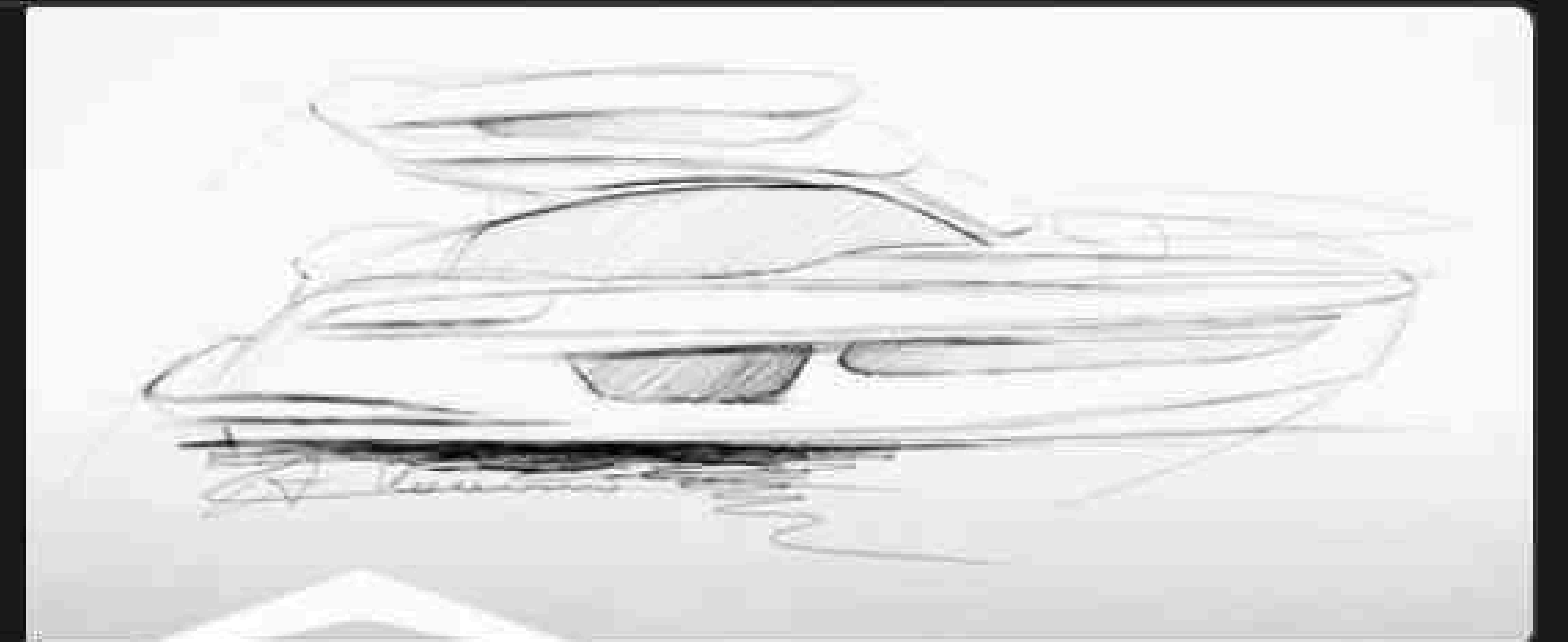


### Azimut 53 Exterior Design | Interview with Yacht Designer Albert...

→ Check out the Azimut 53:

<https://www.azimutyachts.com/azimut53.html>

▶ [https://www.youtube.com/watch?v=spocHPWo\\_Ug](https://www.youtube.com/watch?v=spocHPWo_Ug)



### Inside A Super Yacht Designed For And By An Architect (Yacht T...

Conscious of balancing key attributes of landscape, orientation and experience, architect Stephen Jolson of Jolson optimises the itinerant

▶ <https://www.youtube.com/watch?v=KgfGSt6pkdU>



### Designing the SUNBEAM 32.1 Sailing Yacht with VR

Life on a boat isn't like it used to be. Neither is boat design. And development in VR is just one way we're blowing traditional standards out

▶ <https://youtube.com/shorts/LUK6KWHwMDc?si=rXiAij6cnvjssUD>



### Ben Rogerson Yacht Design - BRYD41

Delivering performance in both shorthanded and fully crewed configurations was the design brief for Ben Rogerson's 41 footer. The initial

▶ <https://www.youtube.com/watch?v=04dSqXO8qDY>



### Sailboat Keel Types: 10 Most Common Keels Explained

If you want to watch one video on keel types and just get it, this one is for you. Keels don't have to be confusing; simply classify them the right way.

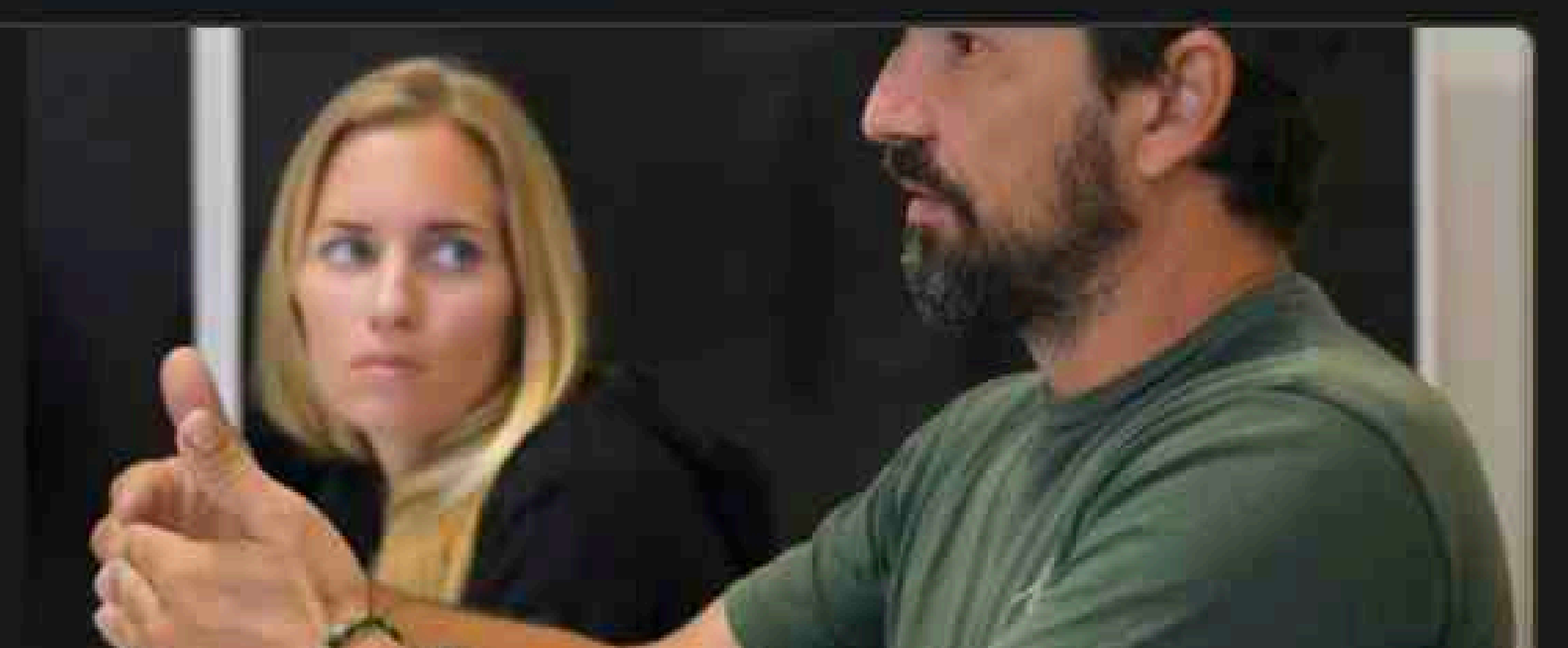
▶ <https://www.youtube.com/watch?v=PU5i4TyTG70>



### Trends in Modern Yacht Design- Interview with a Naval Architect...

Hey Tribe! We know you LOVE the technical side of sailing so we put together this special interview with a naval architect. Kiril did an awesome

▶ <https://www.youtube.com/watch?v=F4D5rvGt1FQ>



### Baltic 146 Path interior and exterior

Baltic 146 Path delivered in 2021 is intended for long distance global cruising, designed to cross oceans at speed and in real comfort.

▶ <https://www.youtube.com/watch?v=aByJ9Uf-tul>



BALTIC 146 PATH



# RESEARCH - KEEL TYPE

### KEEL TYPES EXPLAINED



Full Keel



Bilge Keel



Fin Keel



Bulb Keel

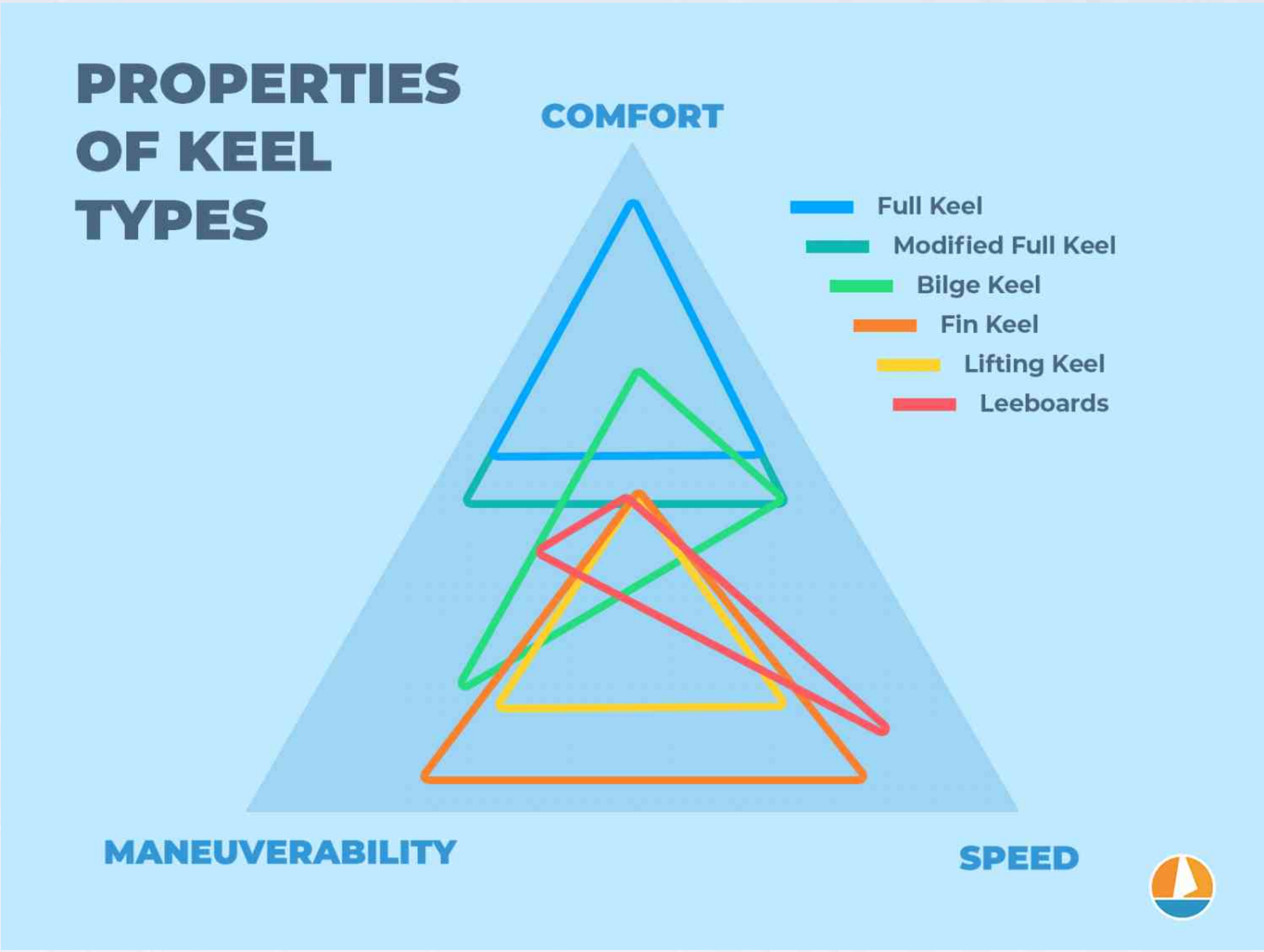


Wing Keel



Lifting Keel





Keel type	Comfort	Maneuverability	Speed
Full keel	+++	--	--
Modified full keel	+++	-	-
Fin keel	-	++	++
Bilge keel	+	+	-
Lifting keel	-	++	++
Leeboards	--	--	+++



## FIN KEEL

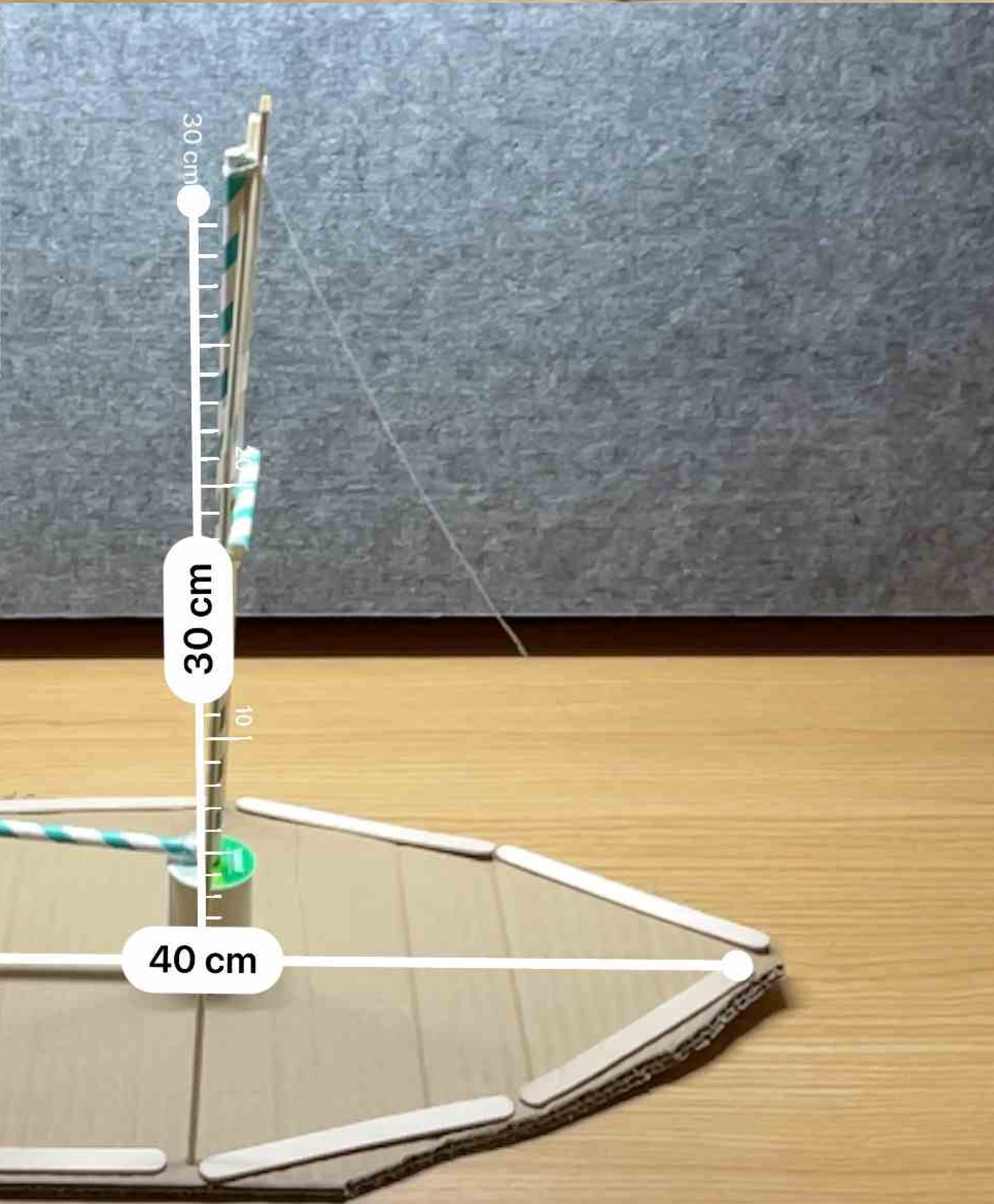
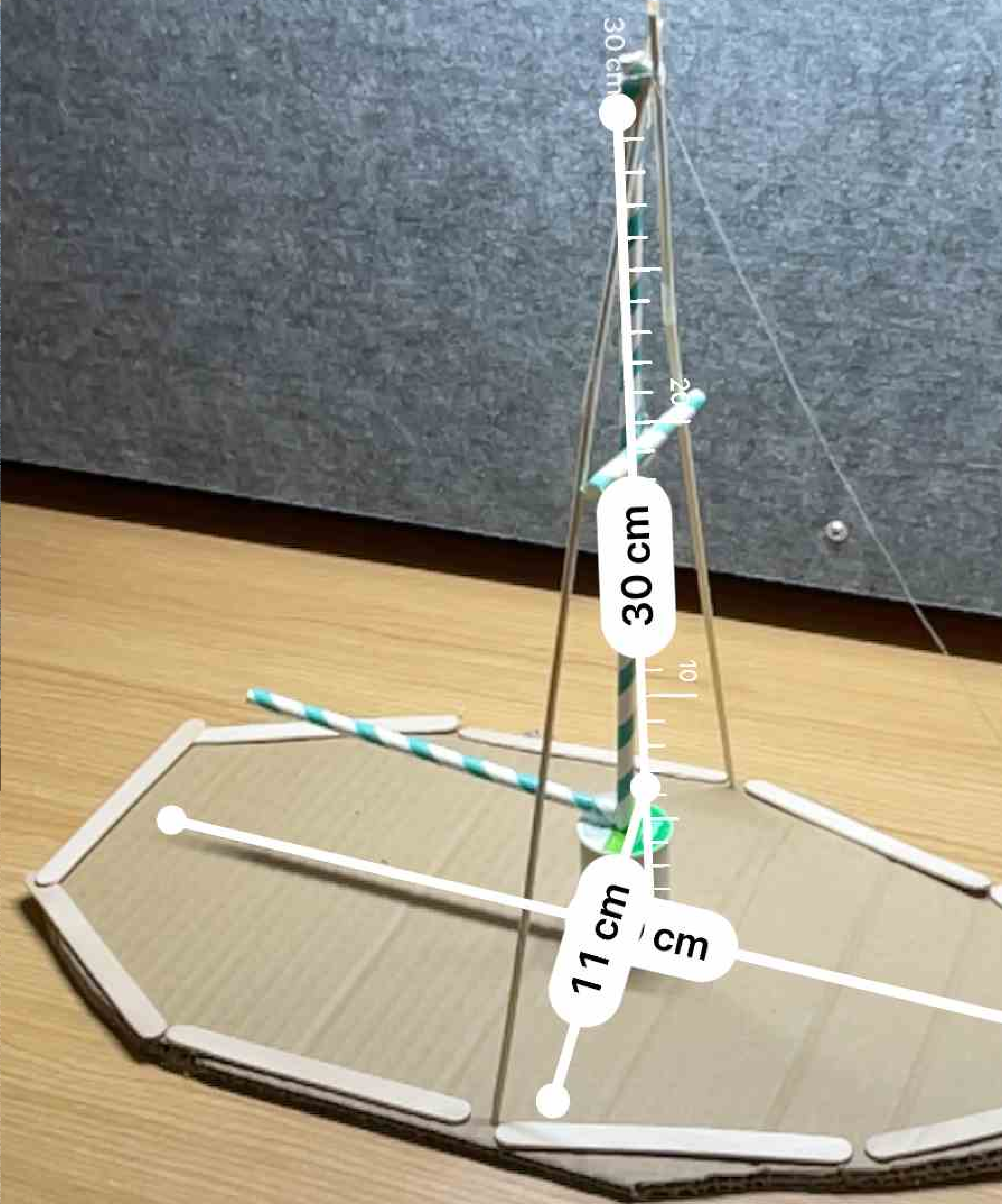
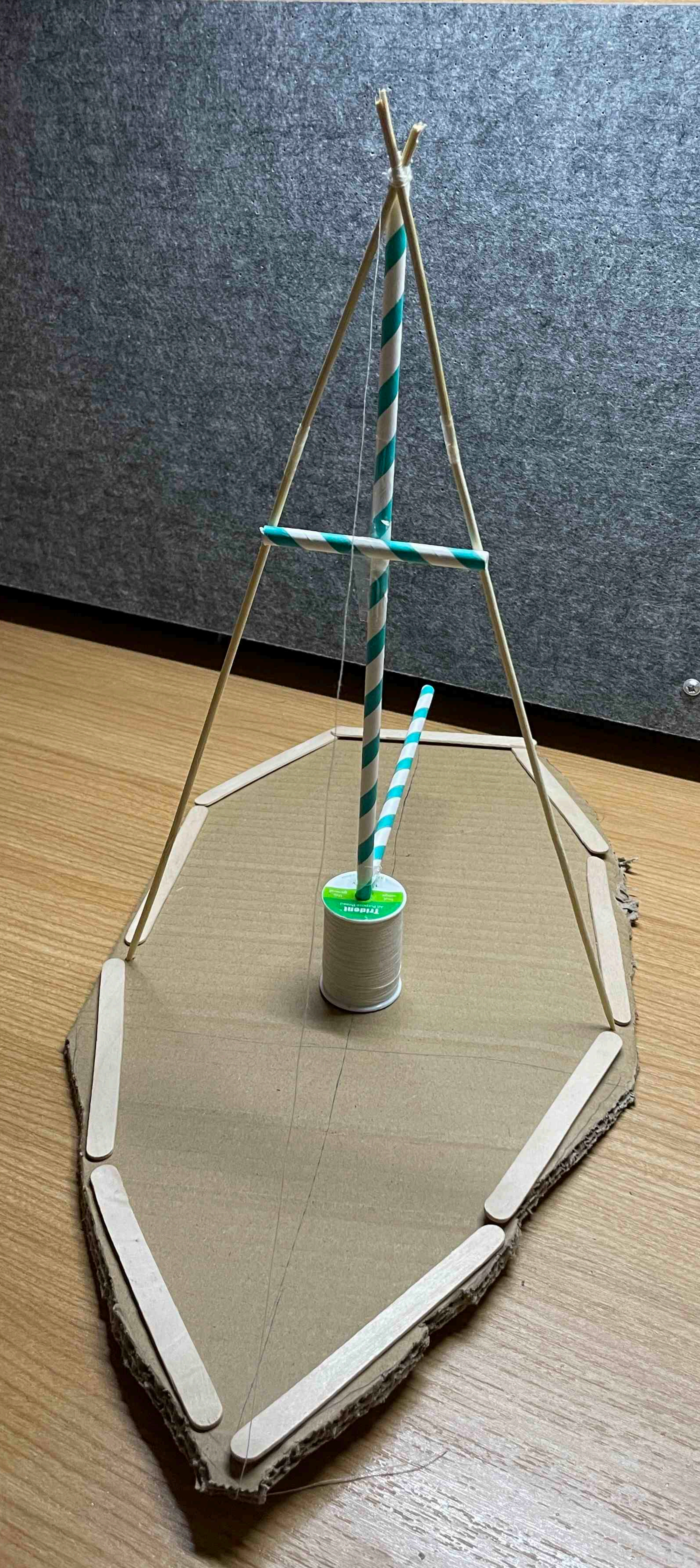




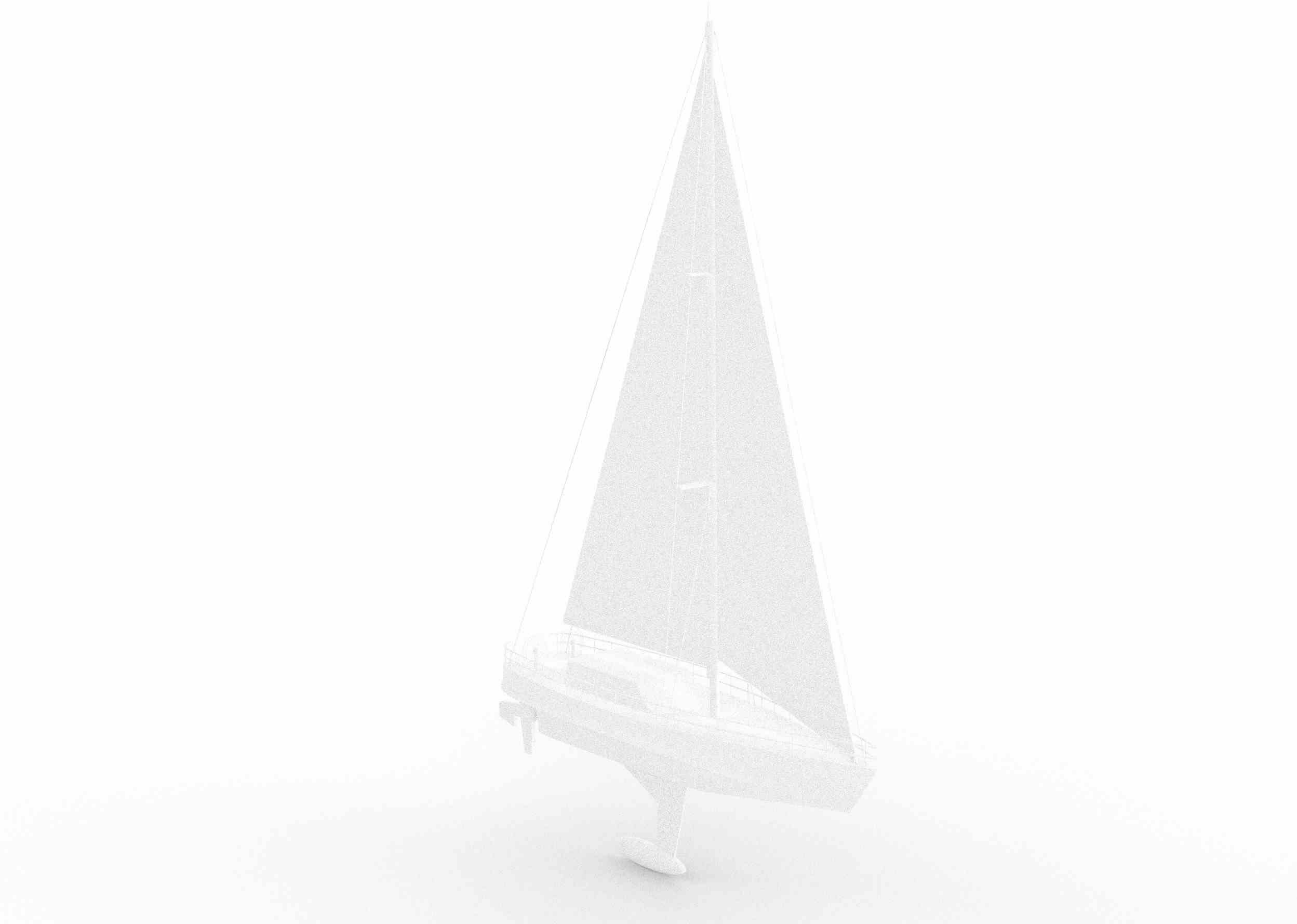
# REFERENCE IMAGES













# Digital Sculpture Library Metadata Schema

Category: User Generated Object

Entity	Description
catalog_ID_number	DS_DATT_3940
title	Yacht Design

## Descriptive Metadata for Digital Object

object_size_x_axis	11.4567"
object_size_y_axis	2.72"
object_size_z_axis	17.95"
object_copyright_license_type	All rights reserved
object_copyright_date	N/A

## Descriptive Metadata for Digital Object

subject_keywords	hardsurface
collection	DSL Collection

## Technical Metadata

file_size	24.2 mb
software	Rhino
creation_date	27th November 2023

## Administrative Metadata

software_operator	Denis Schoernig
metadata_operator	student
institution	York University
open_access	No