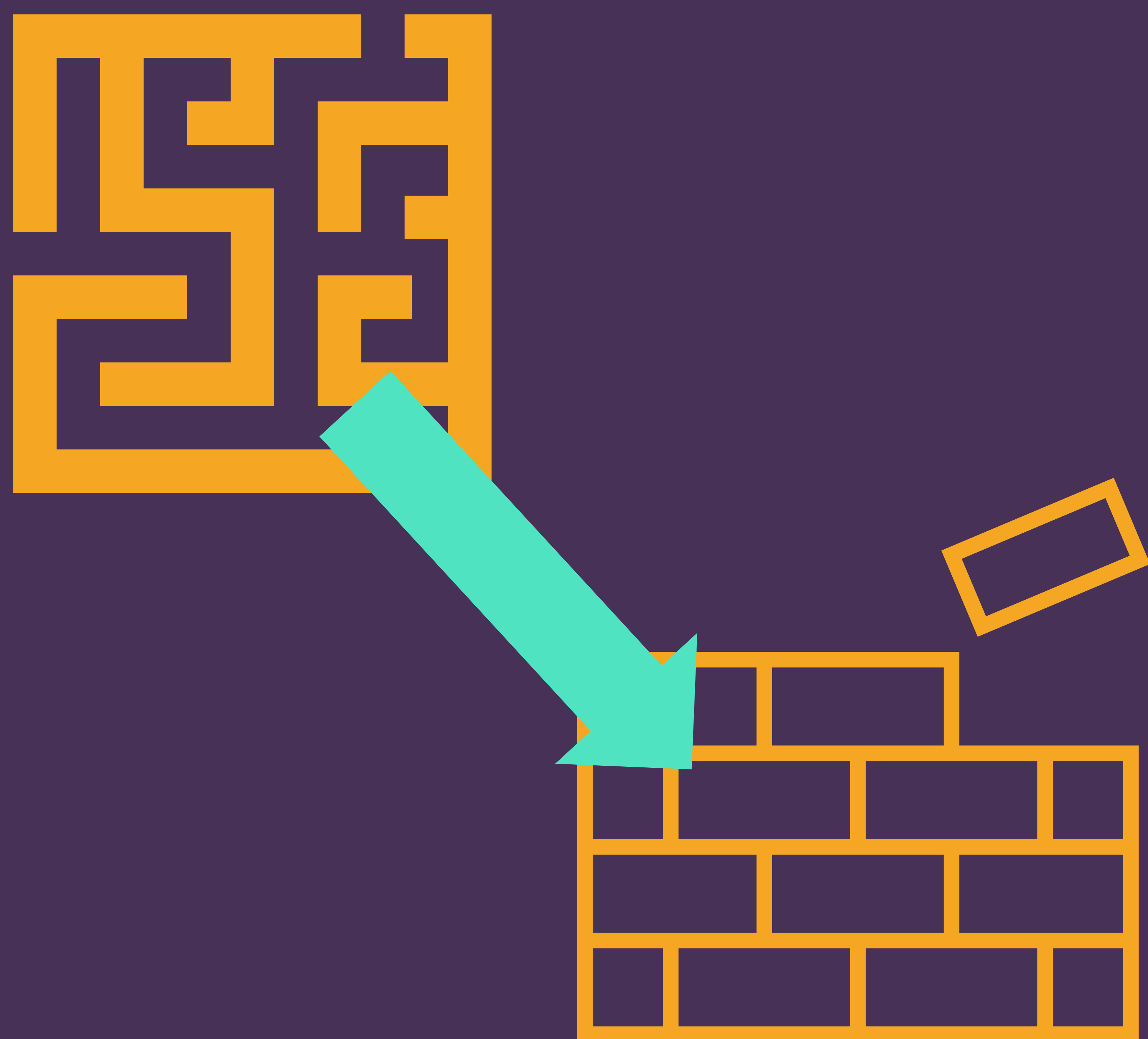
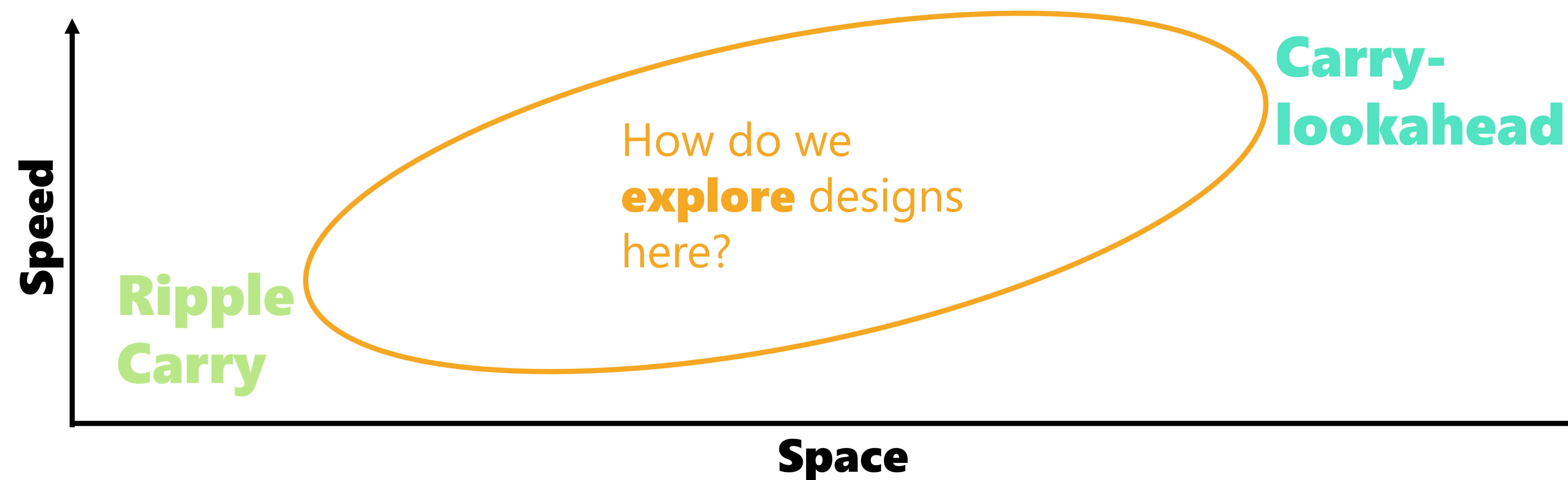


Design hardware like Lego instead of mazes with feature-oriented programming.



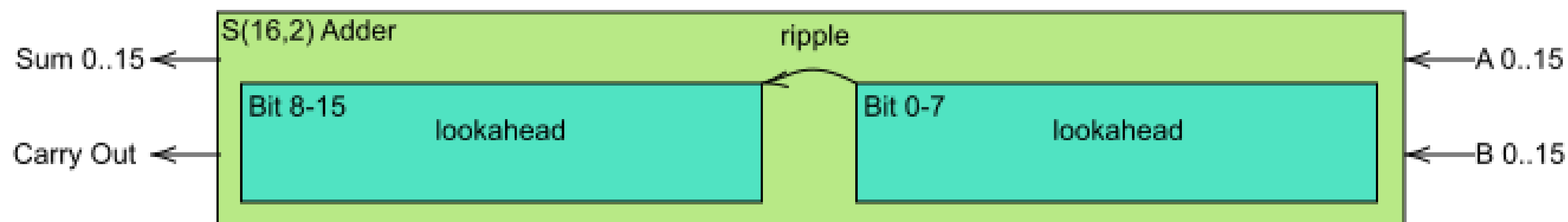
Tradeoffs

Ripple carry is **smaller**, but **slower**. Carry-lookahead is **larger**, but **faster**.



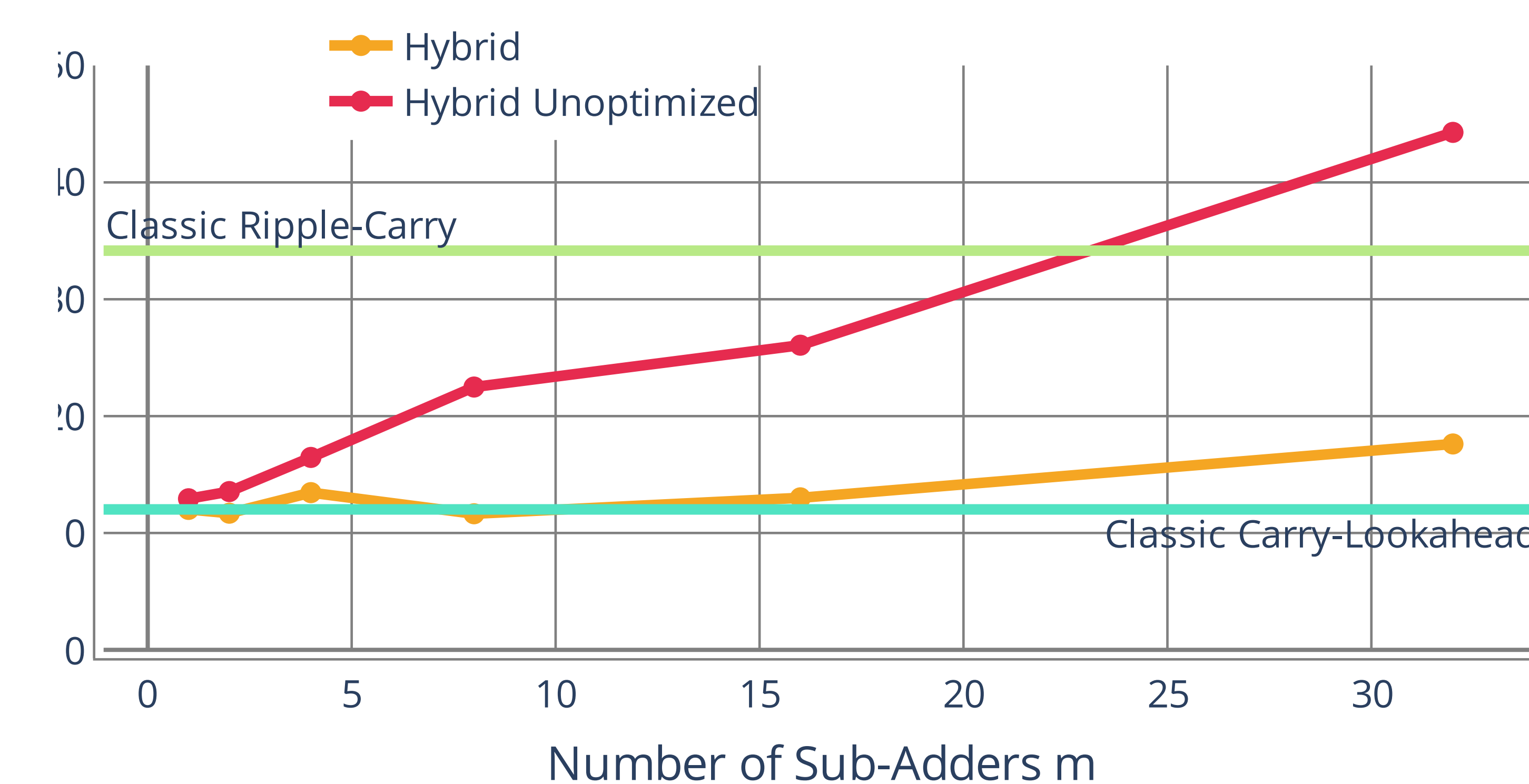
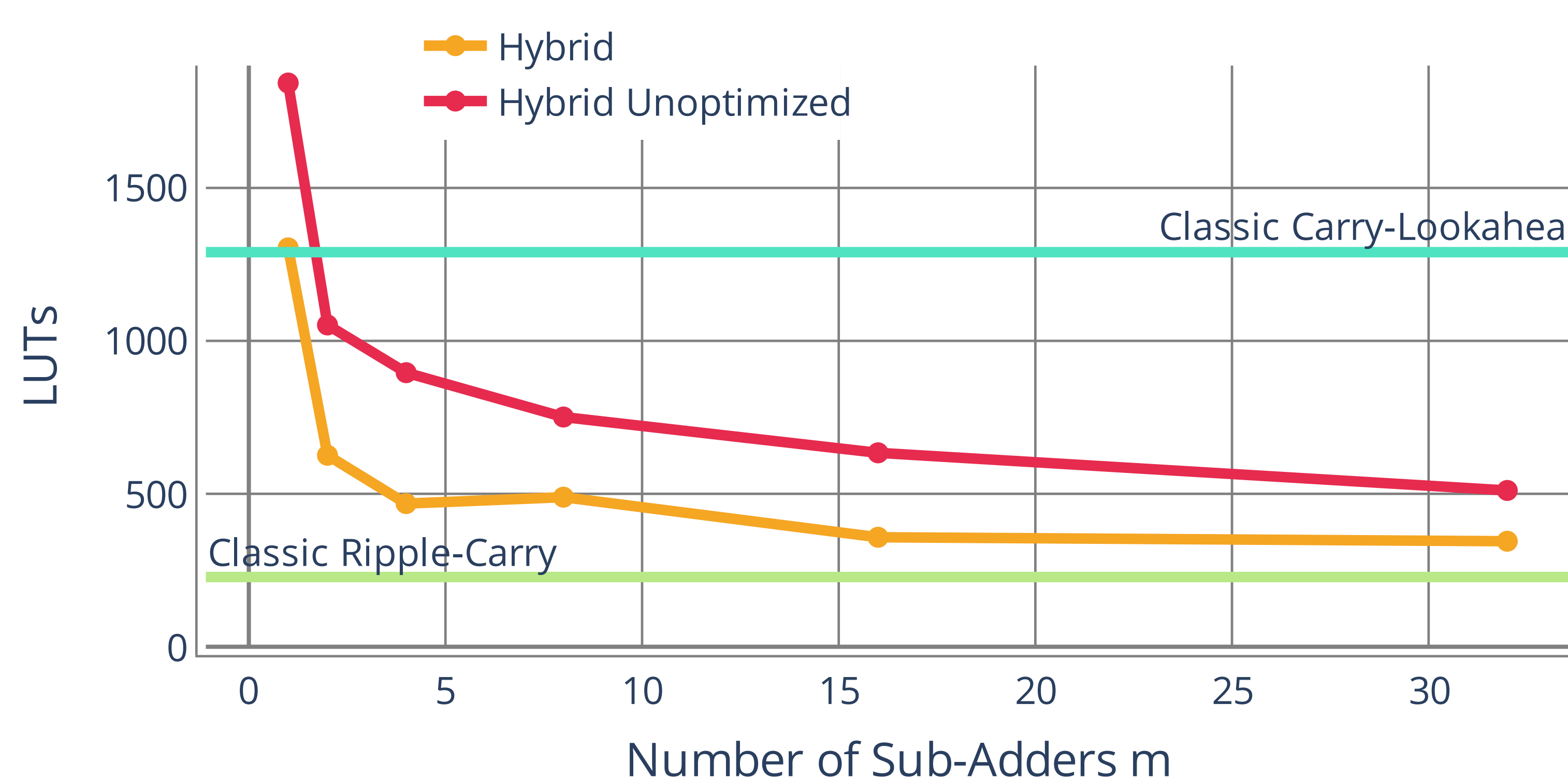
Method

Ripple carry and carry-lookahead are **aspects**. Just say where they should be **applied** to hardware.



Results

Easily **vary designs** and explore optimizations. Give end users a **choice of features** to suit their needs.



Instead of explicitly hard coding every hardware feature, implement them separately and put them together like building blocks.

NOVEL HARDWARE DESIGN VARIATION THROUGH FEATURE-ORIENTED PROGRAMMING

JUSTIN DETERS
WASHINGTON UNIVERSITY IN ST. LOUIS

