

```

def spiralStair(thickness=0.2,R=1.,r=0.5,riser=0.1,pitch=2.,
               nturns=2.,steps=18):
    V,CV = larSolidHelicoid(thickness,R,r,pitch,nturns,steps)()
    W = CAT([ [V[k],V[k+1],V[k+2],V[k+3]]+
               [SUM([V[k+1],[0,0,-riser]]),SUM([V[k+3],[0,0,-riser]])]
               for k,v in enumerate(V[:-4]) if k%4==0])
    for k,w in enumerate(W[:-12]):
        if k%6==0: W[k+1][2]=W[k+10][2]; W[k+3][2]=W[k+11][2]
    nsteps = len(W)/12
    CW =[SUM([ [0,1,2,3,6,8,10,11],[6*k]*8])
          for k in range(nsteps)]
    return W,CW

```